Creating a World of Difference

TAAS
ISRAEL INDUSTRIES LTD.
TECHNOLOGIES GROUP
Aircraft Systems & Equipment Division

Creating a Different Company, and a Company that Makes a Difference.

TAAS - Israel Industries Ltd. is the second largest industrial concern in Israel employing some 7,000 workers in 18 plants. It is a large diversified organization in which its Aircraft Systems & Equipment (ASE) Division has played a pivotal role in the nation's security for the last 40 years.

Right now, in light of rapidly changing global and business environments, TAAS is regrouping to meet new challenges, applying its expertise, experience and technologies to expanding markets for commercial systems and products.

With the accent on flexibility, TAAS is restructuring itself from a large centralized management system to diversified efficient profit centers such as the ASE Division. In this way the Division benefits from its close association with a large company, while acquiring the resilience and versatility characteristic of a relatively smaller stand-alone organization.

Although TAAS is changing, one thing remains constant: the tradition of putting customer needs above all. TAAS international network of representatives is strategically positioned in close proximity to our customers to provide continuous support from concept phase to completion, and throughout the product lifecycle.

With customer satisfaction as the ultimate goal, TAAS has adopted the philosophy of Total Quality Management (TQM). Its principles permeate every division of the company. Today, everyone in every organizational level is focused on enhanced, improved processes, and a better work environment.

Proud of its history and heritage, and poised for the future, TAAS Aircraft Systems & Equipment Division is becoming a different company - and a company that makes a difference.

Dr. E. Graff
Vice President - TAAS
Division General Manager

Putting Our Minds To New Missions

TAAS made Auxiliary Mission Equipment

MD-11 Engine Pylons

INNOVATION, IMAGINATION, COMMITMENT.

These are the traits that have made TAAS ASE Division a leader in design, development and production of airborne equipment for over 40 years.

From armament pylons to rocket launchers and jettisonable fuel tanks, from wide body jet engine pylons to jumbo aircraft floors, pyrotechnics to complete armament packages, the ASE Division offers a comprehensive product line supported by a complete service package that includes everything from planning to testing to maintenance.

As a member of large organization, the ASE Division enjoys the strong, stable backing of TAAS - financially and technologically. Nevertheless, it has retained its responsiveness to customer needs - handling large scale projects as well as small but highly sophisticated systems.

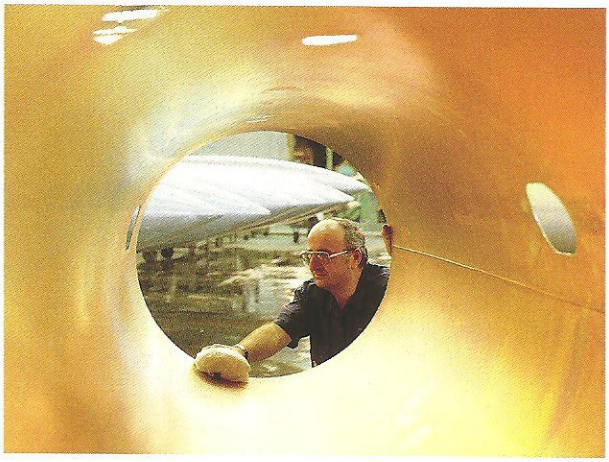
Having teamed with many of the world's leading aerospace industries including Douglas Aircraft Company, Boeing Commercial Airplane Co., McDonnell Aircraft Company and General Dynamics, the ASE Division has earned a reputation for regimental reliability, quality, delivery on time, and within budget.

Right now there's a new spirit in the TAAS ASE Division. A change in the air. In light of declining defense budgets and rising commercial air travel, the Division is redeploying its unique assets and skills in a strategic response to changing world conditions.

Its objective is to harness the company's wide spectrum of technologies and research, production and testing facilities to create new products for growing commercial markets.

But while our objectives have changed, the standard of excellence that has been a tradition with us hasn't. TAAS ASE Division still aims to provide our military and commercial customers with the highest level of quality, value, and service in the industry.

Sharing Skills, Transposing Technologies



Unusual View of F-16 Fuel Tanks

TAAS ASE Division's skills are based on technological leadership in a wide variety of programs:

- *Development, design and testing of airborne systems.*
- *Product/system integration and assembly.*
- *Detailed parts production, machining and forming.*
- *Overhaul and maintenance of mechanical, electronic, hydraulic, fuel and other systems.*
- *Build-to-Print products.*

The Division can provide expert engineering, design and analytical services, or can act as a Build-to-Print manufacturing and assembly subcontractor.

It has the resources to offer complete turnkey solutions from requirement definition and concept through design, manufacturing and complete product support.

Throughout every group of the company there is a sharing of technologies, bringing together a unique blend of skills and talents that is resulting in new, innovative systems and products.

TAAS ASE Division is now actively targeting the commercial sectors with the same specialist skills, technologies and experience.

Reviewing today's capabilities and focusing on tomorrow's needs, the Division's flexible approach ensures a smooth shift between military and commercial roles.

Major in-house Capabilities and Technologies

The wide range of products manufactured by TAAS ASE Division is characterized by complex assembly and integration demands. This has resulted in a multitude of key technologies and capabilities available in-house.

TAAS ASE full spectrum of in-house services and technologies includes manufacturing and assembly facilities. Our manufacturing expertise has earned international recognition both in military and commercial markets.

In fact, over 60% of the jettisonable fuel tanks in the free world, and a majority of F-15 pylons and adapters are products of TAAS ASE Division expertise.

Among the Division's state-of-the-art facilities and equipment are the following:

- *CNC machining centers (milling, turning, jigboring).*
  An example is the 5 axis, 3 spindle, 66 foot long Cincinnati gantry milling machine.
- *Verson hydraulic presses - 2500 & 500 tons.*
- *TIG, MIG and automatic welding machines.*
- *Chemical milling of aircraft parts.*
- *Several 3 axis inspection coordinating units, Brown & Sharp, Bendix-Cortex.*
- *Metallurgical and chemical labs.*

Metal Working Services:

Customers have access to a full range of services that include casting, machining, heat treatment, hardening, tempering, surface treatments, coating and finishing for exotic materials such as Titanium, Maraging Steel, Copper Berilium etc. The Division's entire metal production line conforms to all FAA requirements.

Sheet Metal Processing:

Capabilities encompass the production of floor panels, landing gear doors, metal fuel and water storage tanks, and passenger doors. Fabrication facilities enable production of lightweight thinwall structures while using technologies such as spinning & stretch forming. TIG, MIG, spot and manual welding systems enable welding of large size assemblies.

Assembly Capabilities:

Another area in which the Division excels is tooling up for and assembling electrical, pneumatic, hydraulic and mechanical products, subassemblies and assemblies. TAAS ASE Division regularly designs and builds fixtures for processing both large and small assemblies, while using diverse material combinations.

Testing Facilities:

After assembly and prior to shipment, all units undergo functional testing, which may include load testing, vibration and shock testing and mating to airframe. Other tests, including flight tests, can be performed according to customer and part specifications.

Maintenance and Overhaul:

TAAS ASE Division has extensive experience in maintenance, upgrading and overhaul of military aerospace equipment. Since the very beginning of Israel's renowned Air Force, the Division has played a vital role in performing the various levels of maintenance that have been instrumental to the Air Force superiority.

Engineering and Design Capabilities

Finite Element Model
Stress Analysis - F-16 Pylon

• *CAD/CAM IMPLEMENTATION*

TAAS ASE Division has a complete digital definition capability, while working in an entirely electronic environment to design, build, test and support the product. The approach is to implement a total electronic models environment from initial design to production floor. Software is selected according to customer requirements and necessity to exchange data with the customer. All design and development activities are generated from a 3D Integrated Data Base. The solid modeling approach may result in electronic mock-ups.

Using CAD/CAM systems, Running CATIA, UNIGRAPHICS and MEDUSA Software, TAAS ASE Division speeds product development by simplifying conceptual and detailed design, drafting, and numeric control (NC) programming.

The Division's CAD/CAM systems are capable of accepting and incorporating design data from other systems or can transfer data even to remote locations.

• *DESIGN*

Exploiting accumulated know-how, expertise and extensive CAD capabilities, TAAS ASE engineers excel in diverse aircraft design and analysis disciplines such as:

- *Metal & Composite Structure design.*
- *Tooling and Fixtures design.*
- *Pneumatic, Hydraulic and Fuel Systems design.*
- *Electrical and Electro-Mechanical System design.*
- *Aerodynamics and Flow Analyses.*
- *Stress and Fatigue Analyses.*
- *Thermal Analyses.*
- *Damage Tolerance and Fracture Mechanics Analyses.*

An Example: Engine Pylons for DAC trijet MD-11

One of the areas where the ASE Division has demonstrated its unique expertise and technological leadership is in the MD-11 Wing and Tail Rolls Royce Engine Pylons project.

Its responsibilities in the project were all-inclusive, from design (according to FAR and JAR standards), analyses and testing, to supporting the tooling and manufacturing of the pylon parts. Quality Assurance and Control were according to Douglas Aircraft Company requirements. The Division also constructed the mock-up for maintainability demonstration. The company earned special recognition from DAC for its management of technical tasks and resources.

Quality Assurance Approach

At TAAS ASE Division every activity is viewed as a process that can be continuously measured and improved.

The Division is certified to work in accordance with:

- *MIL-Q-9858A*
- *MIL-I-45208*
- *D1-9000*
- *ISO-9001*
- *MIL-STD-1535*
- *MIL-STD-45662*

The Division's Quality Assurance Department develops specific QA programs for all major products. From incoming source inspection through quality checks at every stage of design, prototyping, production and testing, independent quality teams monitor and check every part of the process.

Quality Control testing plays a paramount role at every stage of design and production to ensure that products meet the most demanding standards and requirements. In addition to our own QA processes, ASE Division is a qualified supplier to Boeing, McDonnell Aircraft Company, General Dynamics Ft. Worth Division and more.

Total Quality Management (TQM)

The principles of TQM permeate every division of the company. TQM has been adopted as the new management philosophy underlying all company operations with complete commitment through the highest management levels. The principles of TQM - customer satisfaction, process improvement, worker involvement - are instilled in all echelons of the company and supervised by a Director at the corporate level.

Statistical Processes Control (SPC)

TAAS ASE Division has adopted SPC methods and procedures for the continuous improvement of processes, within the organization. These include various types of control charts and statistical methods, process capability studies, criteria to be used for determining "out of control" conditions, and corrective action procedures.

The implementation of SPC goals and guidelines has led to recognition of TAAS Aircraft Division as an approved supplier by major international aerospace companies.

Diversifying In New Directions

Engineering, manufacturing, installation, support - TAAS Aircraft Division's capabilities are all-inclusive. The Company is recognized not only for its technological know-how, but for its vast experience in planning and producing some of the most advanced airborne products in the world today. Performance-proven, they have demonstrated their superiority outside of the laboratory — in actual combat conditions.

At present, the Division manufactures:

- **PYLONS:** *for F-16, F-15, F-4, A-4, Mirage and Kfir. An example of a turnkey project is a multipurpose inboard pylon for the F-4, specially designed to carry all existing armaments as well as newly-developed air-to-ground missiles.*

TAAS ASE division is currently applying existing expertise to design and build pylons, Fuel Tanks and airframe components for aircraft ranging from single engine to large wide-bodied jets, and for engine interfaces like nacelles and thrust reversers.

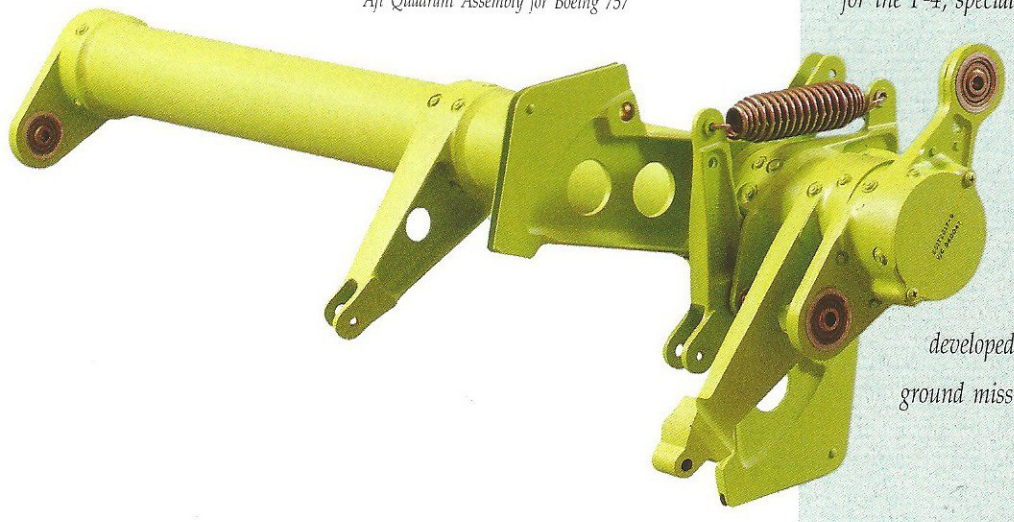
Production of Tactical Air Launched Decoys (TALD) is another area in which the Division excels:

- **TALDs** *for the U.S. Navy, and Israel Air Force, with preprogrammed course, deployable wings, multiple carriage.*
- **Improved TALD (ITALD)** *is a self propelled decoy to achieve longer range and improved maneuverability.*
- **AIRFRAMES:** *Subsystems for Boeing 757 and 767, major floor components for 747 cargo conversion.*

Other areas of production include:

- **AUXILIARY MISSION EQUIPMENT** *(AME) for fighter aircraft.*
- **JETTISONABLE FUEL TANKS** *for F-16 (370 gal. capacity), F-18, and F-4 (600 gal. capacity) and*

Aft Quadrant Assembly for Boeing 757



Various Fighter Fuel Tanks

Missile Launcher Detent Mechanisms

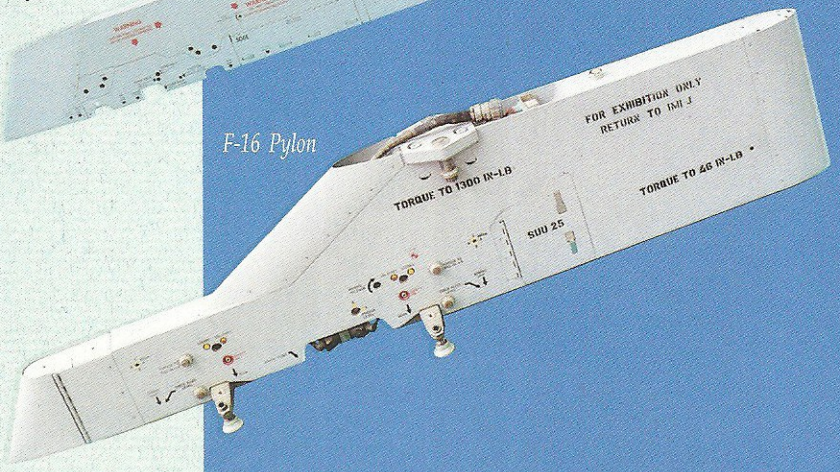
other fighter platforms, to provide longer flight endurance.

- **DISPENSERS:** Illuminating Flares, Chaff & IR Flares, Chaff.
- **LAUNCHERS:** For carrying the Python air-to-air missiles; Vertical launching systems for the U.S. Navy.
- **RELEASE AND EJECTION UNITS:** Mechanical, Pyrotechnic, F-16 Hydraulic vertical ejection racks (VER) for 2 or 4 bombs (original design).
- **ADAPTERS:** For bomb racks, missile launchers.
- Finally, the Division has maintained its leadership position in overhaul and modernization of existing aircraft equipment.

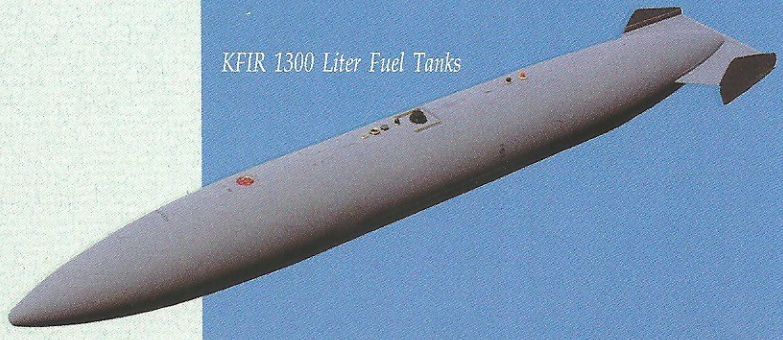
TAAS ASE Division is a sought after partner in many joint ventures and has worked closely with world leading aerospace industries such as General Dynamics, Douglas Aircraft Company, Boeing Commercial Aircraft Company, McDonnell Aircraft Company, Israel Aircraft Industries and armed forces including, Israel Air Force, U.S. Air Force, U.S. Navy and U.S. Army.

F-15 Centerline Pylon

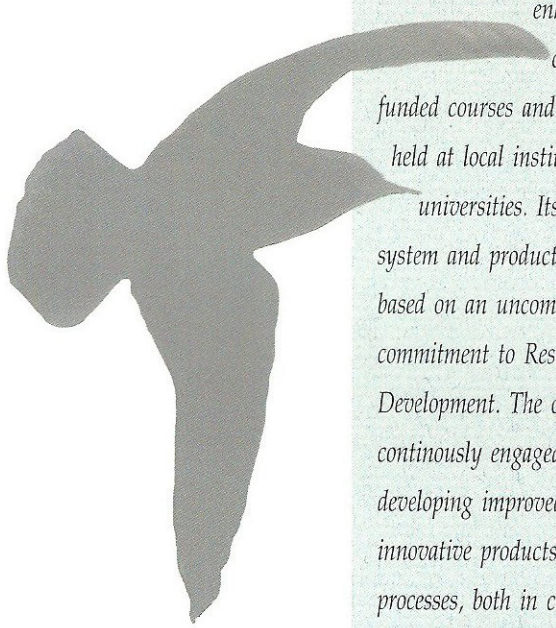
F-16 Pylon



KFIR 1300 Liter Fuel Tanks



Always Reaching Higher



The source of the ASE Division's strength lies in the talent and motivation of its work force. The skills of the company's scientists and engineers are continuously enhanced by company-funded courses and seminars held at local institutes and universities. Its excellent system and product lines are based on an uncompromising commitment to Research and Development. The company is continously engaged in developing improved and innovative products and processes, both in commercial and military fields. Today the Division is maintaining its traditional defense business while focusing more and more on the commercial sector. The same expertise for which the Division is known for in military programs is now being applied to the commercial market.

A Growing Global Network

You'll find TAAS ASE Division branch offices and representatives in countries all over the globe.

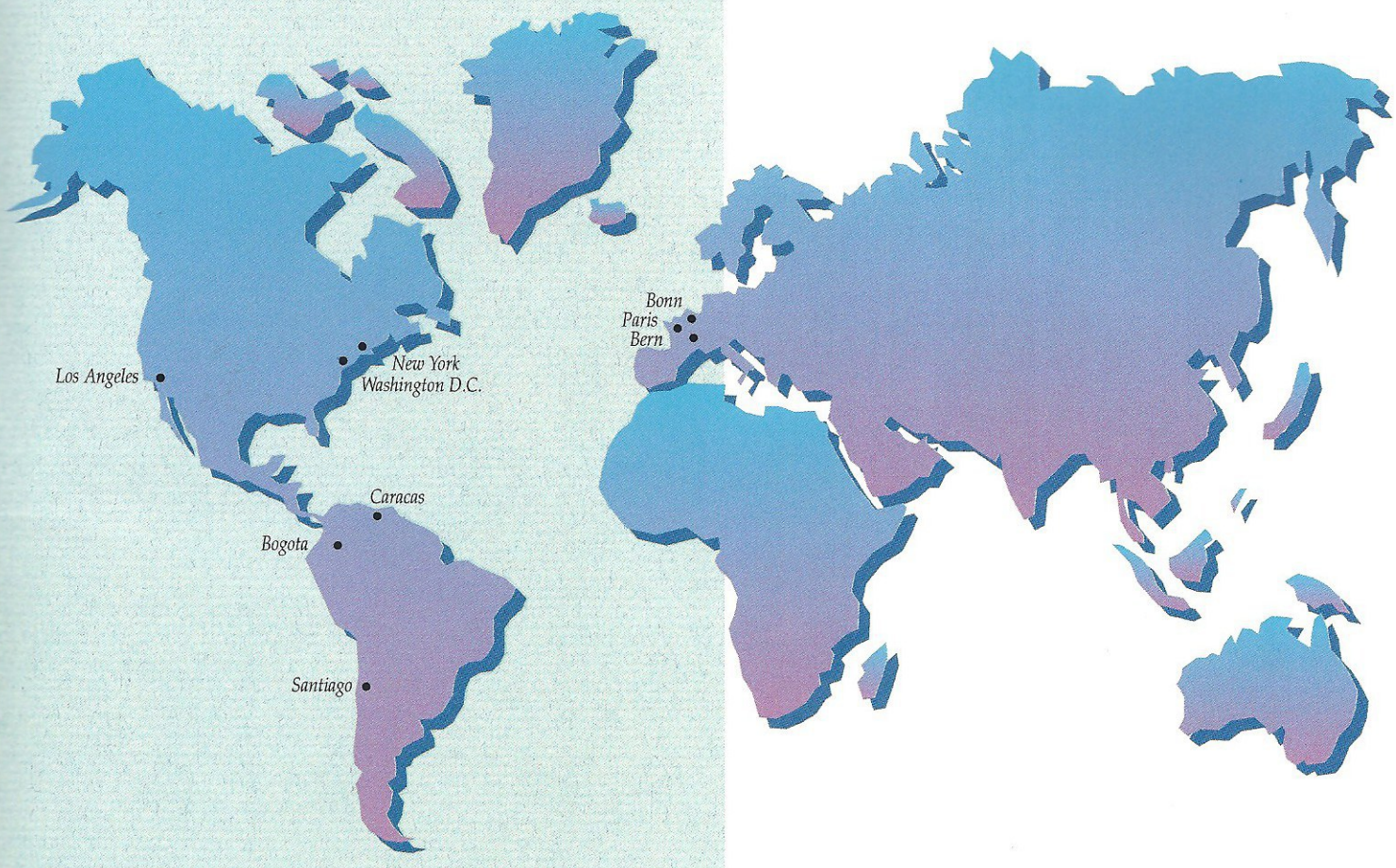
More than 80% of the division's sales are exported to free world nations. This impressive ratio is indicative of the prompt, professional attention we give every contract and part of the reason that we have enjoyed steady growth despite intensive worldwide competition.

The ASE Division realizes that international alliances and cooperation are the keys to competing on a worldwide scale. Towards that end the company is seeking joint venture opportunities and technology transfer programs in rapidly-growing disciplines such as aerospace, communications, electronics, automation, environmental control, management and engineering.

Responding to forecasts that predict commercial air travel to almost double by the end of this century, the Division is ready to meet the needs of airline companies who will seek upgraded platforms and more affordable equipment in lieu of purchasing new planes.

With the skills to compete and exploit technology to the fullest, and a growing global network reaching out to new areas of opportunity, there's nowhere to go but up!

And at TAAS, Aircraft Systems & Equipment Division, the sky's the limit.



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Aircraft Systems & Equipment Division

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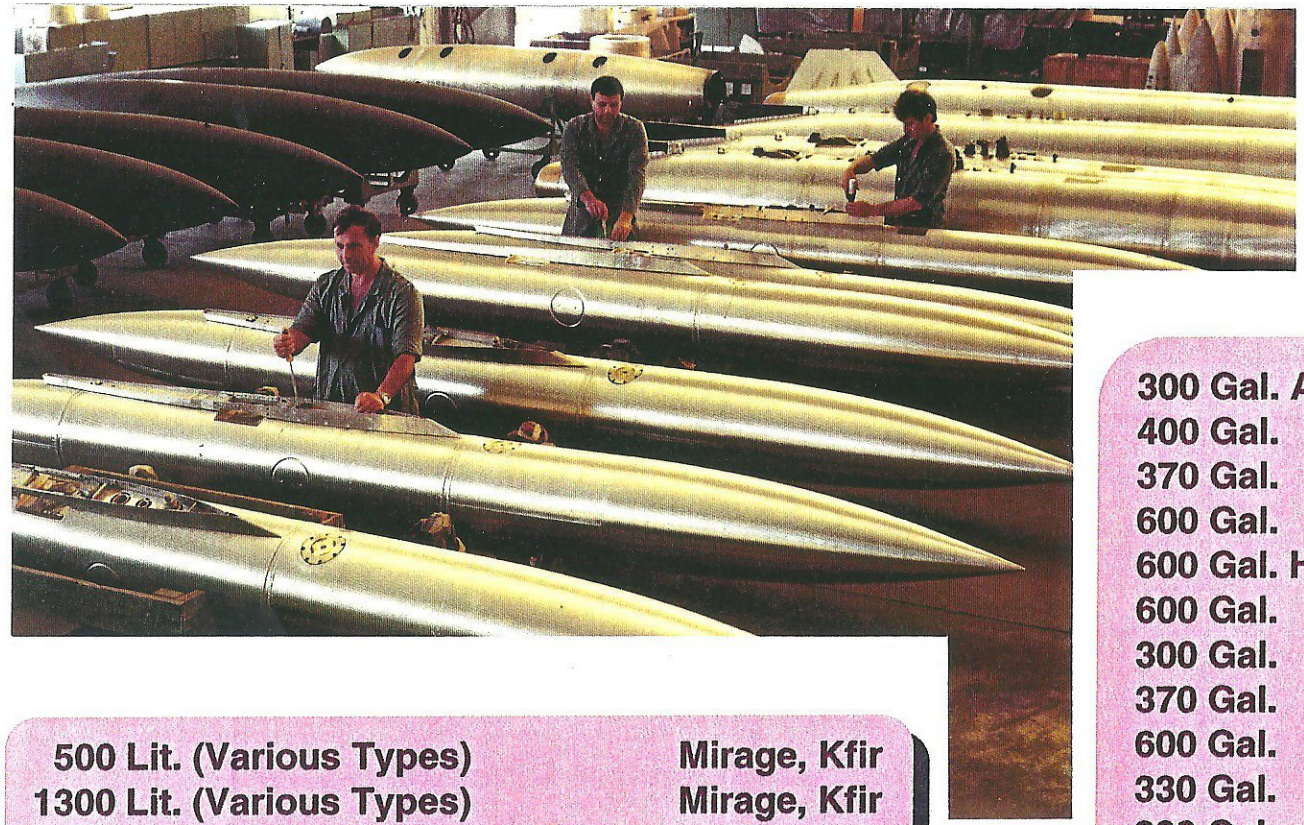
Design & Production: Eitan Communication Ltd.

Products - Fuel Tanks



500 Lit. (Various Types)	Mirage, Kfir
1300 Lit. (Various Types)	Mirage, Kfir
1700 Lit. (Various Types)	Mirage, Kfir
Various Types of Fuel Tanks with Pressure Refuelling Capability	Mirage, Kfir

300 Gal. Aero 1 D	A4, A6
400 Gal.	A4
370 Gal.	F4
600 Gal.	F4
600 Gal. H. Pr	F4
600 Gal.	F15
300 Gal.	F16
370 Gal.	F16
600 Gal.	F16
330 Gal.	F18
300 Gal.	AV8B
267 Gal.	F14
650 Gal.	CH-53

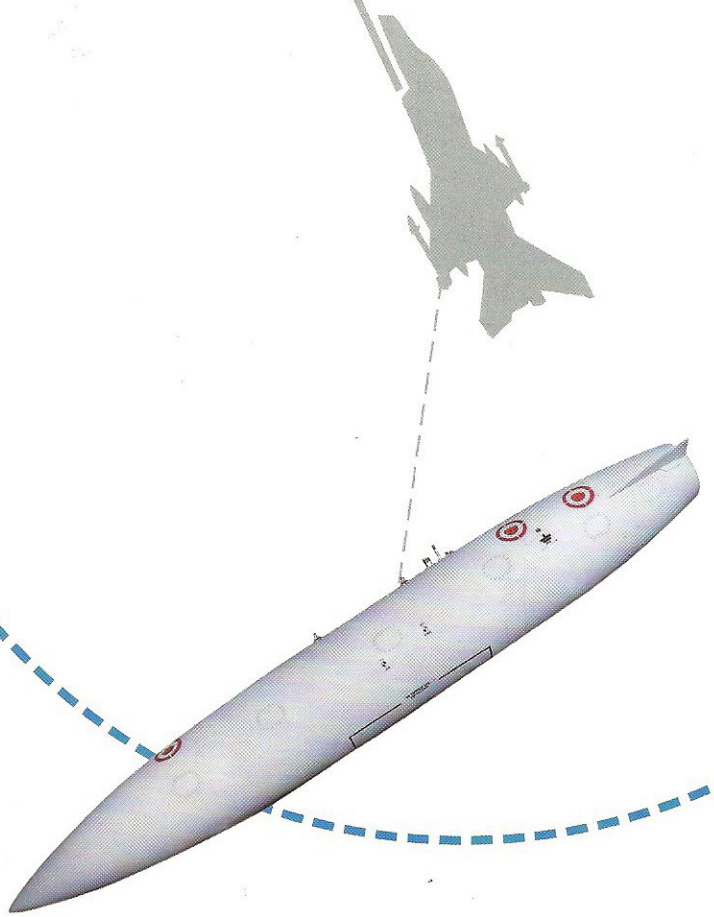
TAAS

F-16 600 Gallon Fuel Tank

+20%

The Solution That Makes The Difference

Jettisonable Wing Fuel Tank



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TECHNOLOGIES GROUP
Aircraft Systems & Equipment Division

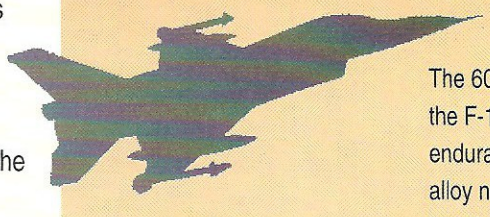
TAAS - Aircraft Systems & Equipment Division designs, develops and manufactures a diverse line of products for aviation applications.

The company's close association with the Israeli Air Force yielded numerous breakthroughs and provides TAAS with first hand experience and testing grounds.

The 600 Gallon Fuel Tank is a special product, backed by thousands of combat hours in the Israeli Air Force, enabling flight range extension and providing longer flight endurance without the need for refueling.

F-16 Fuel Tank

TAAS Cat. No. 07-739



The 600 gallon jettisonable fuel tank is attached to the F-16 aircraft wing pylon to provide longer flight endurance. The tank is constructed of aluminum alloy nose,center, and aft sections welded together. All tank sections are internally bulkheaded and sealed to carry fuel, and utilize individual filler caps.

Highlights

- Two suspension lugs
- A fuel fitting
- An air pressure fitting
- An electrical (quantity gage system) connector
- An electrical (solenoid and float switch) connector
- An aft pivot bolt to ensure safe tank jettison.
- Three drain valves, one in each section, permit drainage of fuel tank sections when required.

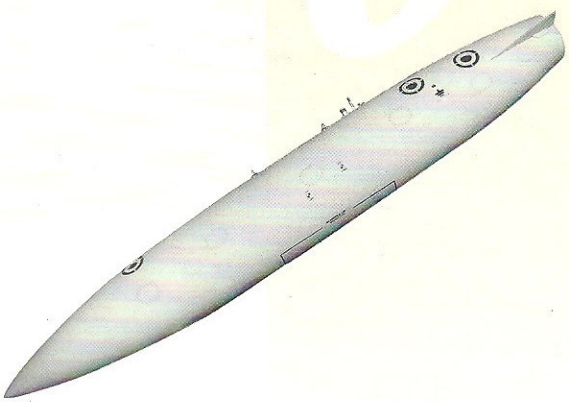
In the ground pressure refueling mode (through the aircarft fuel system) this tank features a selector valve, enabling partial filling as follows:

- 370 gal - center section only.
- 485 gal - front and center sections only.
- 580 gal - all sections.

Note: During in-flight refueling, the 580 gal is the only mode utilized.

Technical Data

Capacity:	U.S.A.	Metric
"Full" Mode	580 gal	2197 lit
"485" Mode	485 gal	1837 lit
"370" Mode	370 gal	1401 lit
Empty Weight	380 lb	173 kg
Overall Length	236.5 inch	6007 mm
Max. Diameter	32.6 inch	828 mm
Operating Pressure	24 psi	1.7 atm



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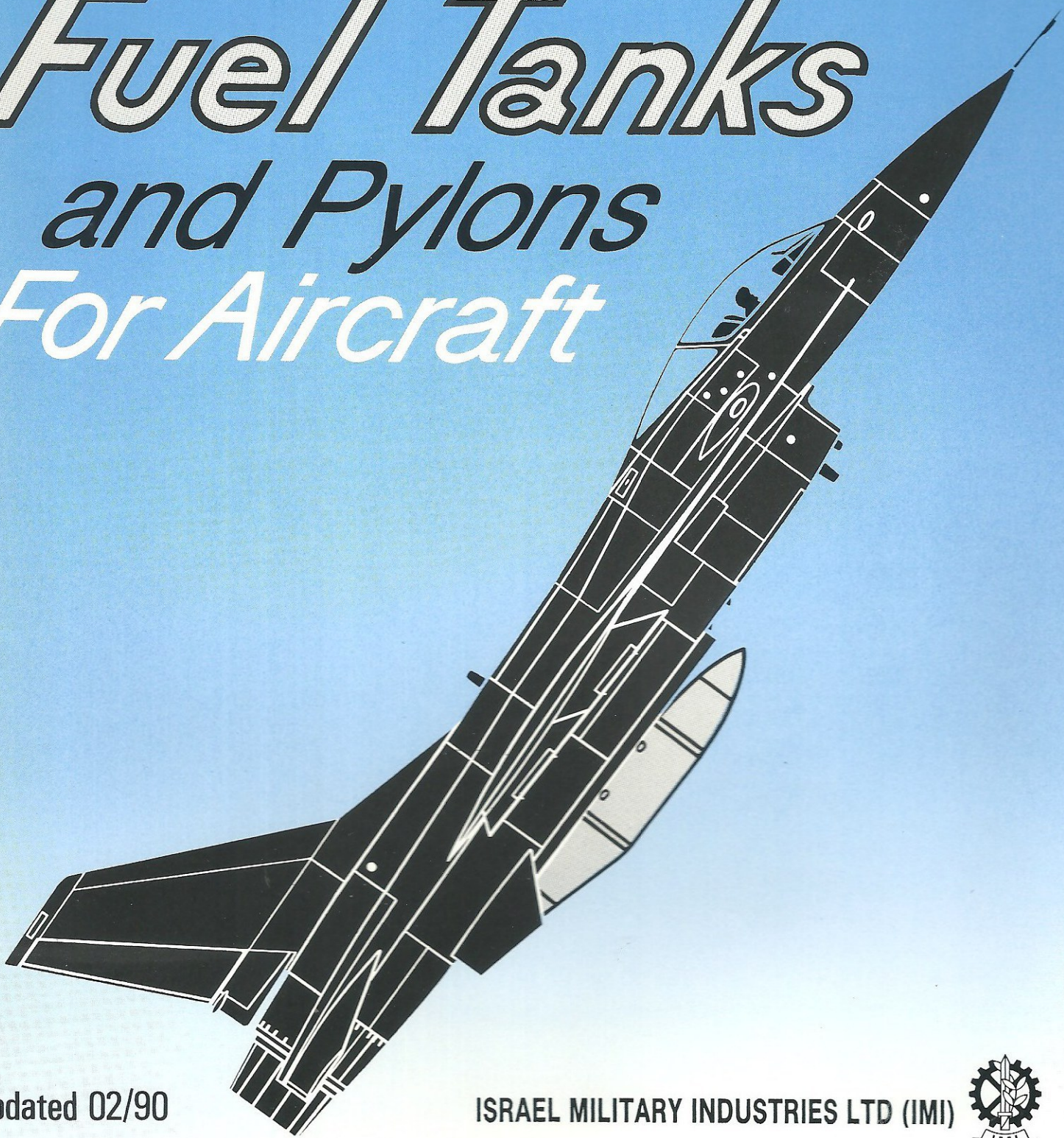
Design & Production: Eitan Communications Ltd.

EXTERNAL Fuel Tanks and Pylons For Aircraft



Updated 02/90

ISRAEL MILITARY INDUSTRIES LTD (IMI)

EXTERNAL FUEL TANKS AND PYLONS

TYPE	I.M.I. CAT. NO.	CAPACITY	A/C TYPE	STATION
RP-18*	07-716	500 Lit	MIRAGE	WINGS
RP-500A*	07-717	500 Lit	MIRAGE, KFIR	WINGS
RP-500B*	07-718	510 Lit	MIRAGE, KFIR	WINGS***
RP-825*	07-744	825 Lit	KFIR	CENTERLINE
RP-1300F*	07-722	1300 Lit	MIRAGE	WINGS
RP-1300P*	07-724	1300 Lit	MIRAGE	WINGS
RP-1301*	07-729	1300 Lit	MIRAGE, KFIR	CENTERLINE
RP-1302*	07-725	1300 Lit	MIRAGE, KFIR	WINGS
RP-1700*	07-726	1650 Lit	MIRAGE, KFIR	WINGS
RP-300N	07-728	300 Gal	A-4, A-6	WINGS, CENTERLINE
RP-400	07-706	400 Gal	A-4	WINGS, CENTERLINE
RP-370	07-705	370 Gal	F-4	WINGS
RP-600	07-708	600 Gal	F-4	CENTERLINE
RP-604	07-741	600 Gal	F-4	CENTERLINE
RP-302	07-748	300 Gal	F-16	CENTERLINE
RP-372	07-738	370 Gal	F-16	WINGS
RP-371SF**	07-447	370 Gal	F-16	WINGS
RP-616	07-739	580 Gal	F-16	WINGS
RP-601	07-707	600 Gal	F-15	CENTERLINE
RP-267	07-689	267 Gal	F-14	FUSELAGE
RP-330	07-695	330 Gal	F/A-18	CENTERLINE, WINGS
RP300-AV8B	07-691	300 Gal	AV-8B	WINGS

* Tanks that can be modified to include aerial pressure refueling capabilities (see last page).

** Pylon for 370 Gal fuel tank

*** Bomb carrying fuel tank (MADNAP)

RP 18 Fuel Tank
I.M.I. Cat. No. 07-716

The RP 18 non-jettisonable fuel tank has a 500 liter capacity. It is designed to be carried on Mirage wing stations.

The tank is attached directly to the wing by a mounting mechanism and is stabilized by two stabilization pins.

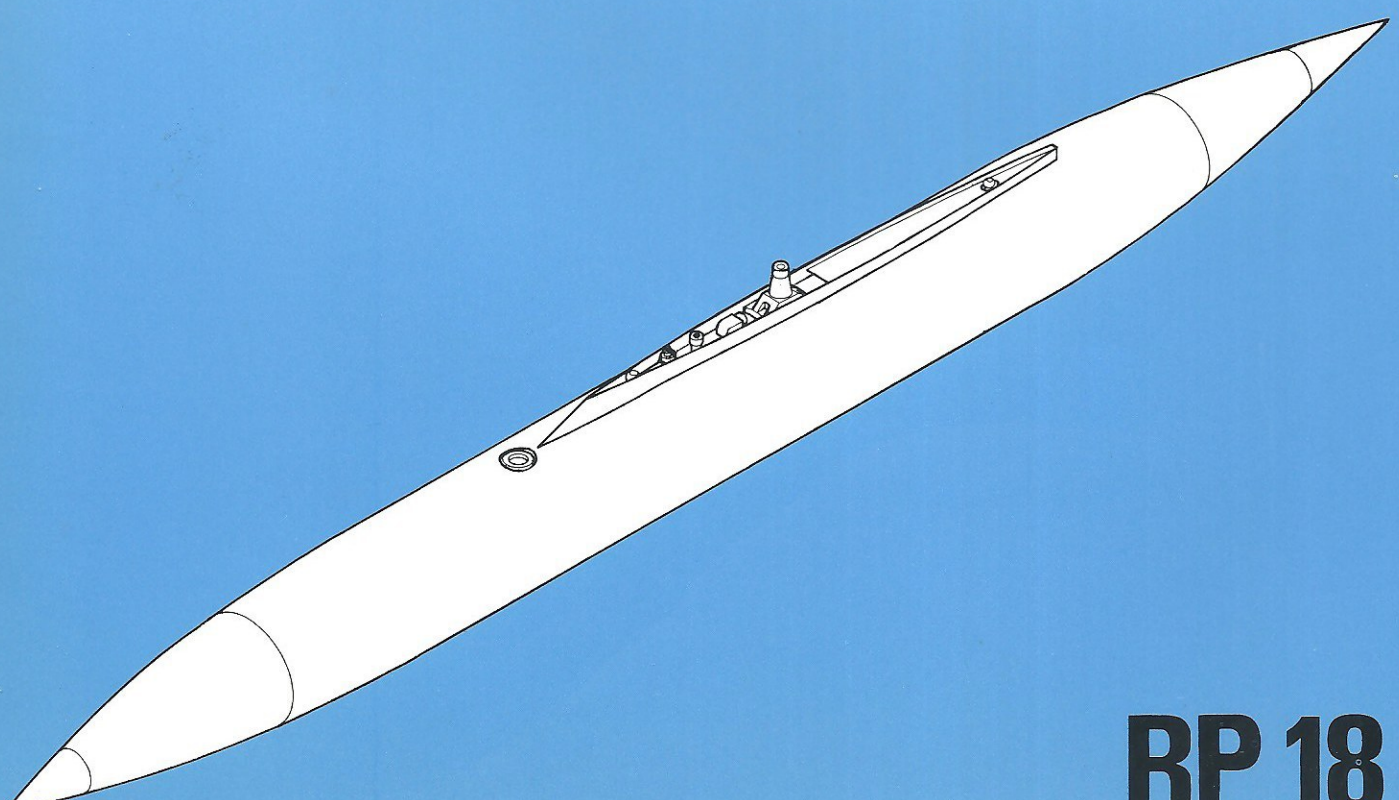
The tank assemblies are not interchangeable between the left and right wings.

The aircraft pressurization system pressurizes the tank. Air pressure forces fuel from tank into aircraft fuel system.

The tank is constructed of aluminum alloy nose, center and tail sections which are bolted together.

Technical Data

	u.s.a.	metric
Capacity	132 gal	500 lit
Empty Weight	169 lb	77 kg
Overall Length	214 inch	5440 mm
Max. Diameter	16 inch	410 mm
Operating Pressure	11.4 psi	0.8 atm



RP 18

RP 500A Fuel Tank
I.M.I. Cat. No. 07-717

The RP500A jettisonable fuel tank has a 500 liter capacity. It is designed to be carried on wing stations of Kfir and MIRAGE III, 5/50 family of aircraft.

The tank is mounted directly to the wing by a mounting mechanism and is stabilized by two stabilization pins.

The tank is constructed of aluminum alloy nose, center and tail welded together. Due to its jettison capability the tank is equipped with stabilizing fins.

The tank is equipped with one gravity filler cap and one drain valve.

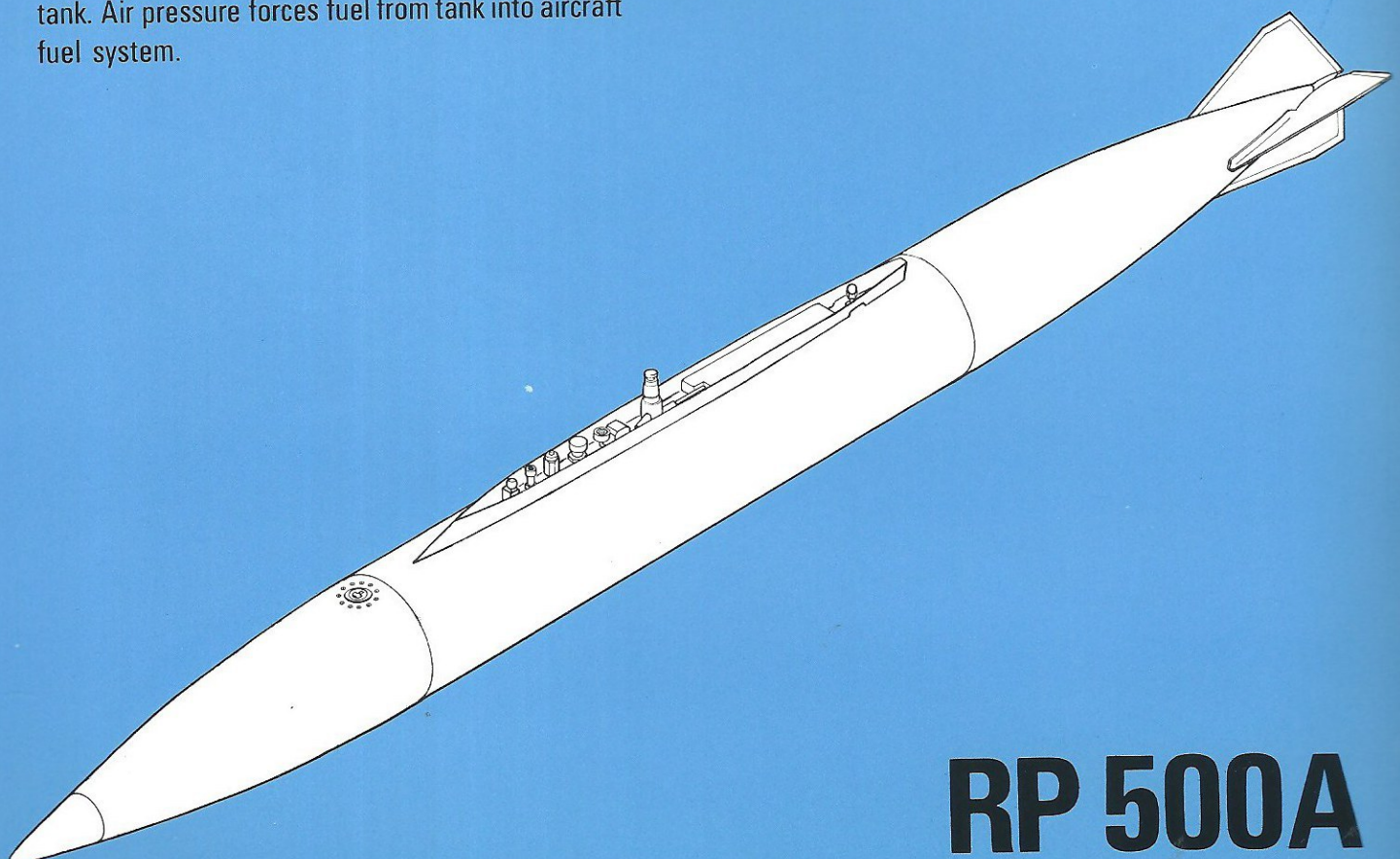
The tank assemblies are not inter-changeable between the left and right wings.

The aircraft pressurization system pressurizes the tank. Air pressure forces fuel from tank into aircraft fuel system.

The fuel tank is jettisonable. The jettison mechanism is actuated by two pyrotechnic cartridges type I-28, IMI Cat. No. 12-353.

Technical Data

	u.s.a.	metric
Capacity	132 gal	500 lit
Empty Weight	174 lb	79 kg
Overall Length	220 inch	5590 mm
Max. Diameter	16 inch	410 mm
Operating Pressure	11.4 psi	0.8 atm



RP 500A

RP 500B Bomb Carrying Fuel Tank (MADNAP)
I.M.I. Cat. No. 07-718

The combined fuel tank and bomb carrier is designed to serve on Mirage III, Mirage 5/50 and Kfir aircraft as a supersonic external fuel wing tank as well as a supplementary bomb rack for augmenting the deliverable payload, and is mounted directly to the wing.

The main purpose of this combination is to utilize to the utmost extent the carrying capability of the wing's strong points and is most valuable for aircraft having a limited number of carrying stations.

The tank is low drag shaped and has been qualified for flight up to 2.0 Mach (in "clean" configuration) or sub-sonic flight (in combined configuration owing to bomb restrictions).

The fuel capacity of the tank is 510 liters. On its lower part are carried two stores (bombs) in tandem positions, weighing up to 280 kg each.

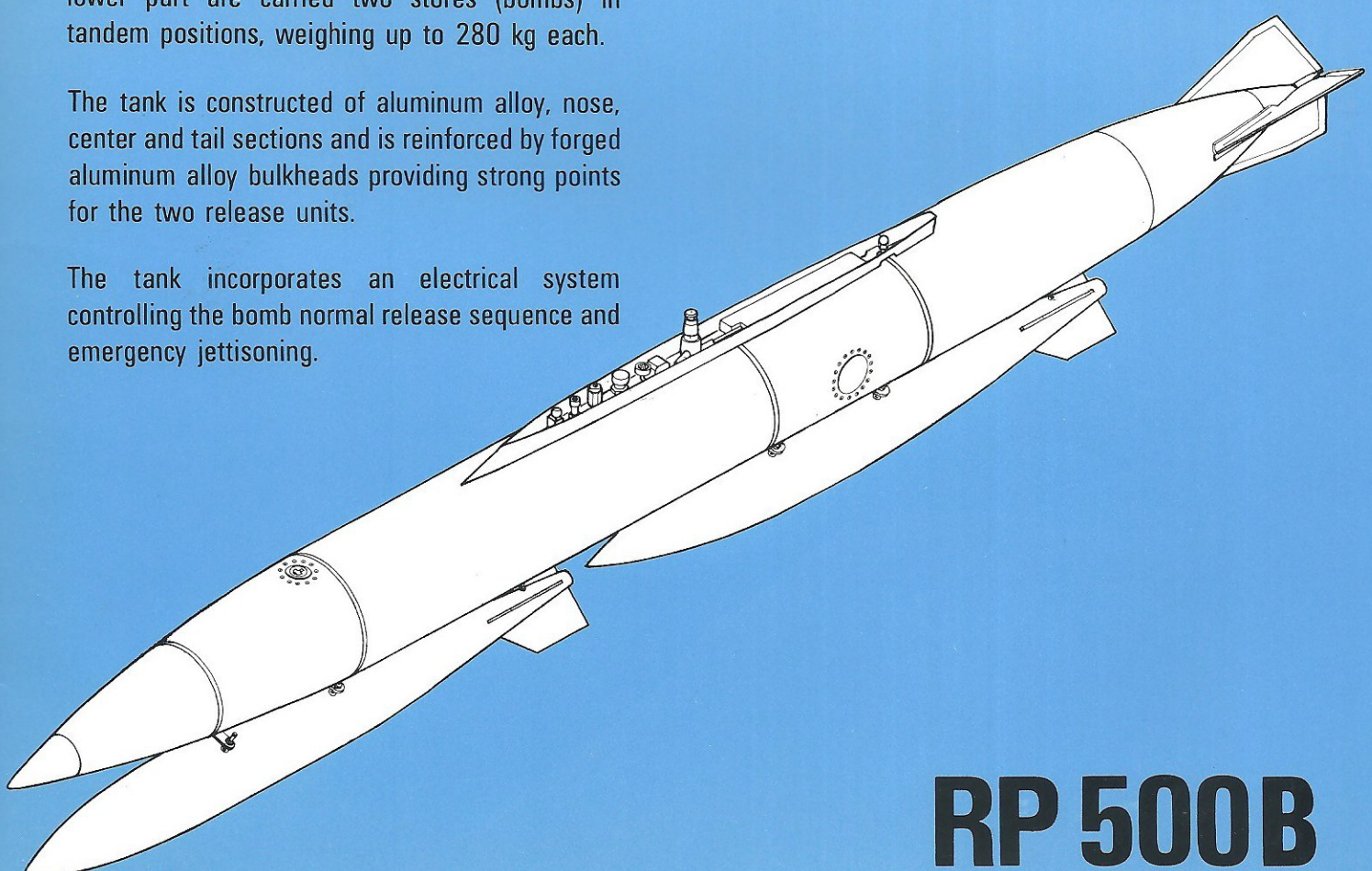
The tank is constructed of aluminum alloy, nose, center and tail sections and is reinforced by forged aluminum alloy bulkheads providing strong points for the two release units.

The tank incorporates an electrical system controlling the bomb normal release sequence and emergency jettisoning.

The tank is jettisonable by two pyrotechnic cartridges type I-28 I.M.I. Cat. No. 12-353 according to an automatic release sequence which transmits the release signal to the aft bomb first, the front bomb next and the tank last.

Technical Data

	u.s.a.°	metric
Capacity	135 gal	510 lit
Empty Weight	286 lb	130 kg
Overall Length	227 inch	5776 mm
Max. Diameter	16.2 inch	411 mm
Distance between bomb Release Units	94 inch	2387.6 mm
Type of Release Unit	electro-magnetic	
Max. Store Weight (each)	616 lb	280 kg
Operating Pressure	11.4 psi	0.8 atm



RP 500B

RP 825 Fuel Tank
I.M.I. Cat. No. 07-744

The RP 825 jettisonable fuel tank has a 825 liter capacity. It is designed to be carried on the Kfir fuselage centerline station by means of a fuel pylon and mounting mechanism.

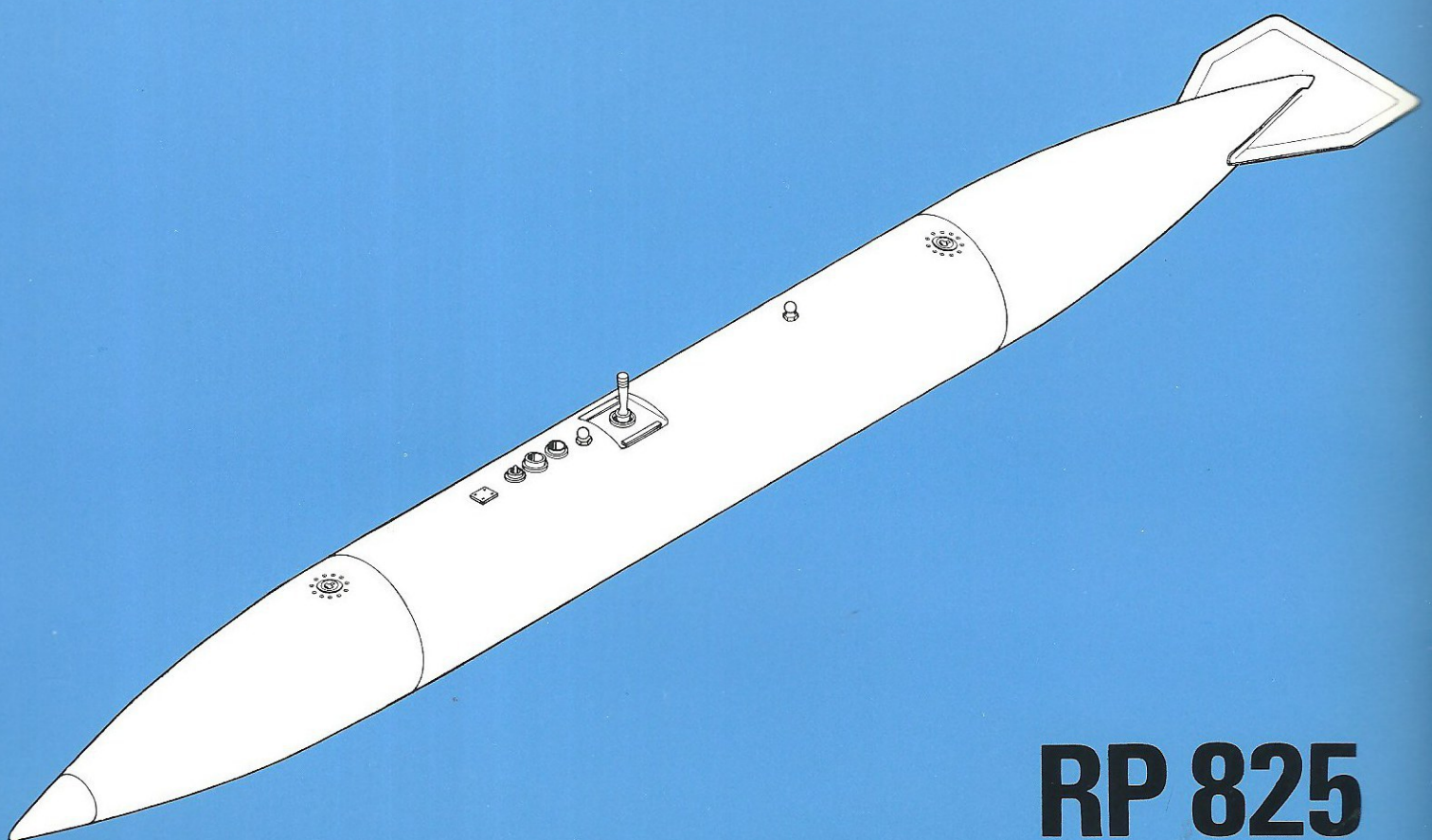
Compressed air, required to transfer fuel from the tank into the aircraft fuel system is supplied from the aircraft pressurization system. A sealed bulkhead divides the tank into two sections. The rear section is emptied first, thus preventing excessive aft shifting of the aircraft's center of gravity.

The fuel tank may be carried on the centerline station of all types of MIRAGE aircraft family (MIR.III, MIR. 5/50).

The fuel tank is jettisonable. The pylon jettison mechanism is actuated by two pyrotechnic cartridges, type I-28, IMI Cat. No. 12-353.

Technical Data

	u.s.a.	metric
Capacity	218 gal	825 lit
Empty Weight	167 lb	76 kg
Overall Length	239.5 inch	6083 mm
Max. Diameter	20 inch	508 mm
Operating Pressure	13 psi	0.9 atm



RP 825

RP 1300F Fuel Tank
I.M.I. Cat. No. 07-722

RP 1300P Fuel Tank
I.M.I. Cat. No. 07-724

Pylon tanks type RP 1300F (RP 62 & RP 63), which are bolted, and RP 1300P (all welded) are external fuel tanks attached to aircraft Mirage III and Mirage 5/50 wings to provide longer flight endurance.

When the pylon tank is pressurized, fuel is forced out into aircraft fuel system.

The tanks are constructed of aluminum alloy, nose, center and tail sections and differ:

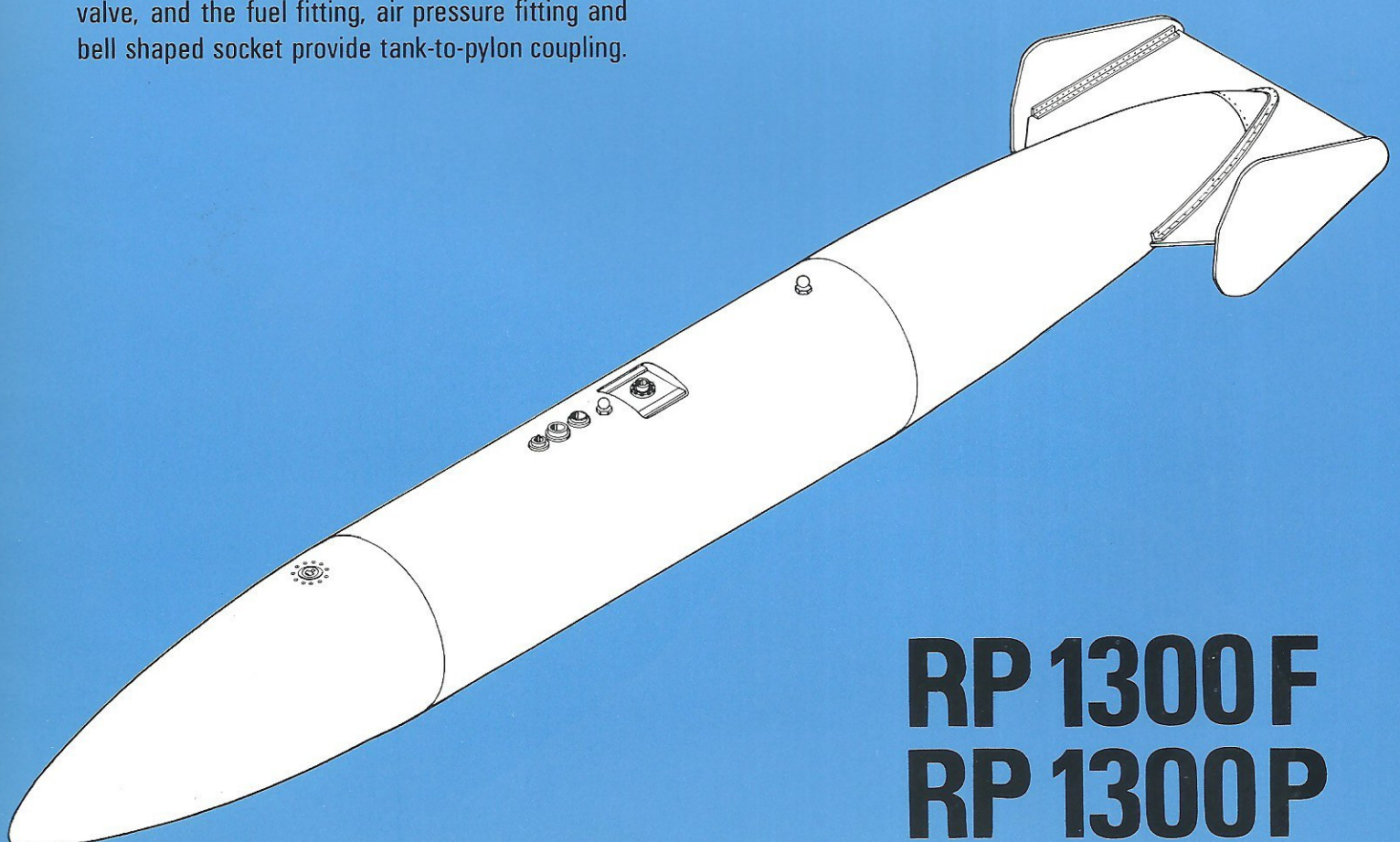
— Types RP 1300F (RP 62 & RP 63) are bolt-assembled and equipped with quick fuel dump valve.
— Type 1300P is all welded and not equipped with dump valve.

All types have one gravity filler cap and one drain valve, and the fuel fitting, air pressure fitting and bell shaped socket provide tank-to-pylon coupling.

All tanks are jettisonable and the jettison is actuated by two pyrotechnic cartridges type I-28, IMI Cat. No. 12-353, located in the ejection system of the pylon.

Technical Data

	u.s.a.	metric
Capacity	343 gal	1300 lit
Empty Weight	238 lb	108 kg
Overall Length	227 inch	5760 mm
Max. Diameter	25 inch	630 mm
Operating Pressure	10 psi	0.7 atm



RP 1300 F
RP 1300 P

RP 1301 Fuel Tank
I.M.I. Cat. No. 07-729

The RP 1301 jettisonable fuel tank has a capacity of 1300 liters. It is designed to be carried on Kfir fuselage centerline station on a pylon. The tank may also be used on various types of the Mirage aircraft family.

The tank is constructed of aluminum alloy nose, center and tail sections, welded together. A sealed bulkhead divides the tank in two sealed compartments. The rear compartment is emptied first thus preventing excessive aft shifting of the aircraft's center of gravity.

The tank is equipped with a fuel fitting, air pressure fitting and a bell shaped socket which provide tank-to-pylon coupling.

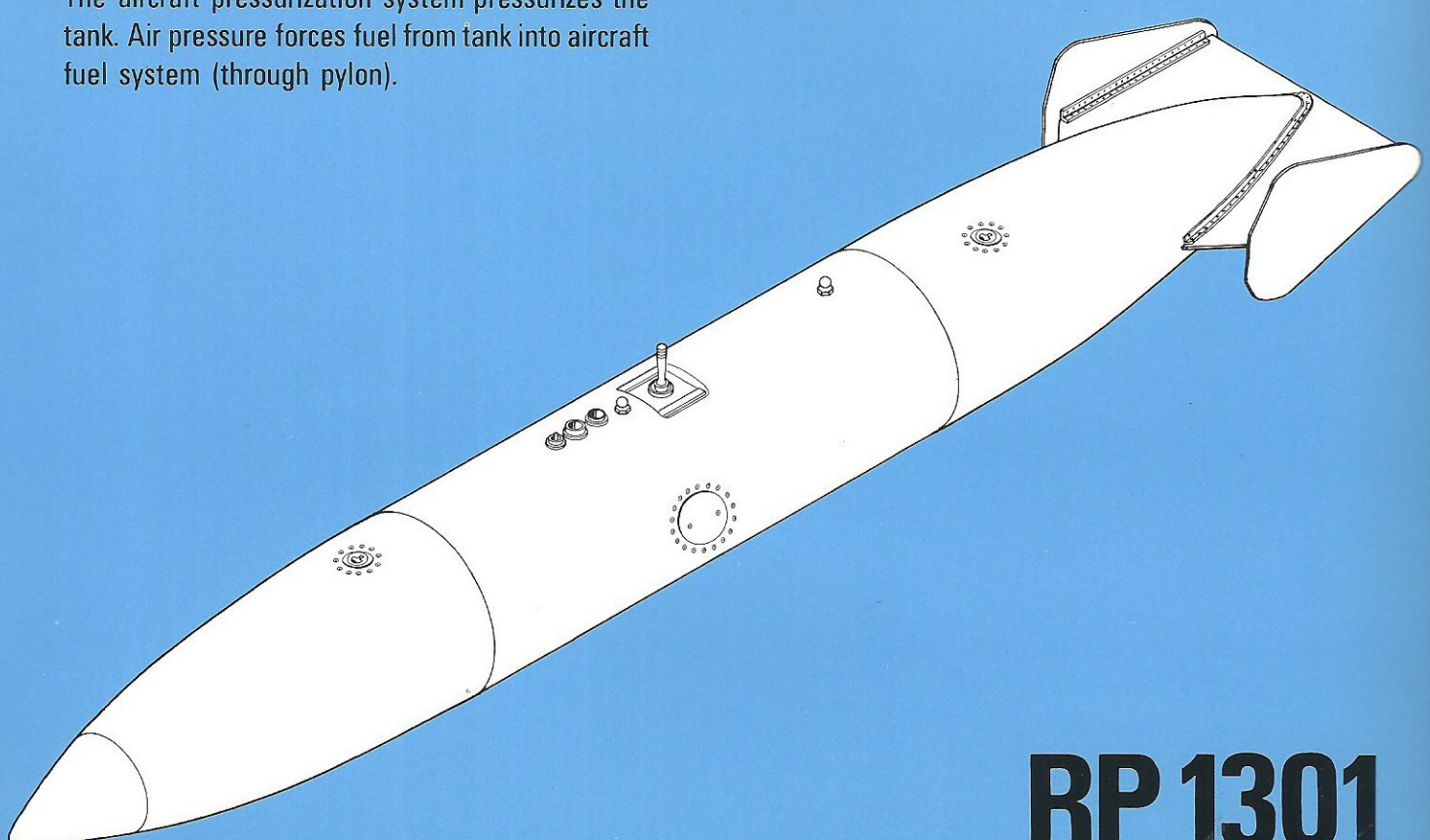
The tank has two gravity filler caps and two drain valves, and is equipped with stabilizing fins.

The aircraft pressurization system pressurizes the tank. Air pressure forces fuel from tank into aircraft fuel system (through pylon).

The fuel tank is jettisonable. The pylon jettison mechanism is actuated by two pyrotechnic cartridges, type I-28, I.M.I. Cat. No. 12-353.

Technical Data

	u.s.a.	metric
Capacity	343 gal	1300 lit
Empty Weight	242 lb	110 kg
Overall Length	227 inch	5760 mm
Max. Diameter	25 inch	630 mm
Operating Pressure	12.8 psi	0.9 atm



RP 1301

RP 1302 Fuel Tank

I.M.I. Cat. No. 07-725

The RP 1302 jettisonable fuel tank has a capacity of 1300 liters. It is designed to be carried on Kfir wing stations 2 and 6. The tank may also be used on various types of the Mirage aircraft family.

The RP-1302 is mounted on a fuel pylon by a bell shaped socket mechanism and is stabilized by two stabilization pins. A tail support bar, installed in the aft cone, acts as a pivot point during jettison and helps control the jettison trajectory.

The tank is constructed of aluminum alloy nose, center and tail sections, welded together.

A sealed bulkhead divides the tank in two sealed compartments. The rear compartment is emptied first thus preventing excessive aft shifting of the aircraft's center of gravity.

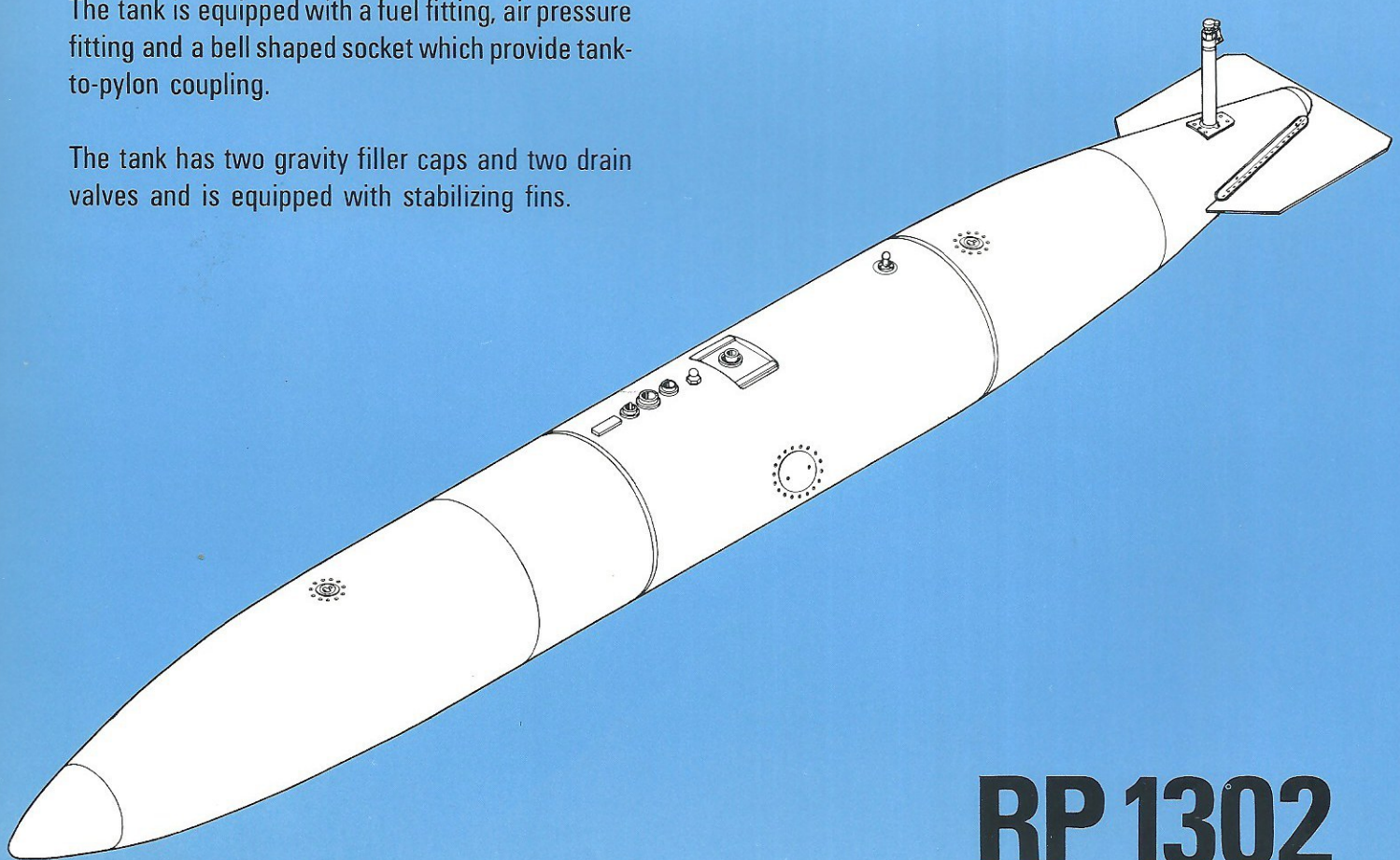
The tank is equipped with a fuel fitting, air pressure fitting and a bell shaped socket which provide tank-to-pylon coupling.

The tank has two gravity filler caps and two drain valves and is equipped with stabilizing fins.

The fuel tank is jettisonable. The pylon jettison mechanism is actuated by two pyrotechnic cartridges, type I-28 I.M.I. Cat. No. 12-353.

Technical Data

	u.s.a.	metric
Capacity	343 gal	1300 lit
Empty Weight	341 lb	155 kg
Overall Length	244 inch	6192 mm
Max. Diameter	25 inch	630 mm
Operating Pressure	10 psi	0.70-0.73 atm



RP 1302

RP 1700 Fuel Tank
I.M.I. Cat. No. 07-726

The jettisonable fuel tank, 1700 liter, types RP-30, RP 301, RP 302, RP 303, is designed to enhance the flight endurance of the Mirage.III, Mirage.5/50, Kfir aircraft family and is attached directly to the wing. The fuel tanks are supplied in Left Hand and Right Hand configurations and are not interchangeable.

The tank is equipped with a fuel fitting, an air pressure fitting, an electrical connector (pyrotechnic cartridges and emergency fuel dump) which provide tank-to-wing coupling, and are enclosed by an aerodynamic fairing.

The tank is also equipped with one gravity filler cap and 2 drain valves.

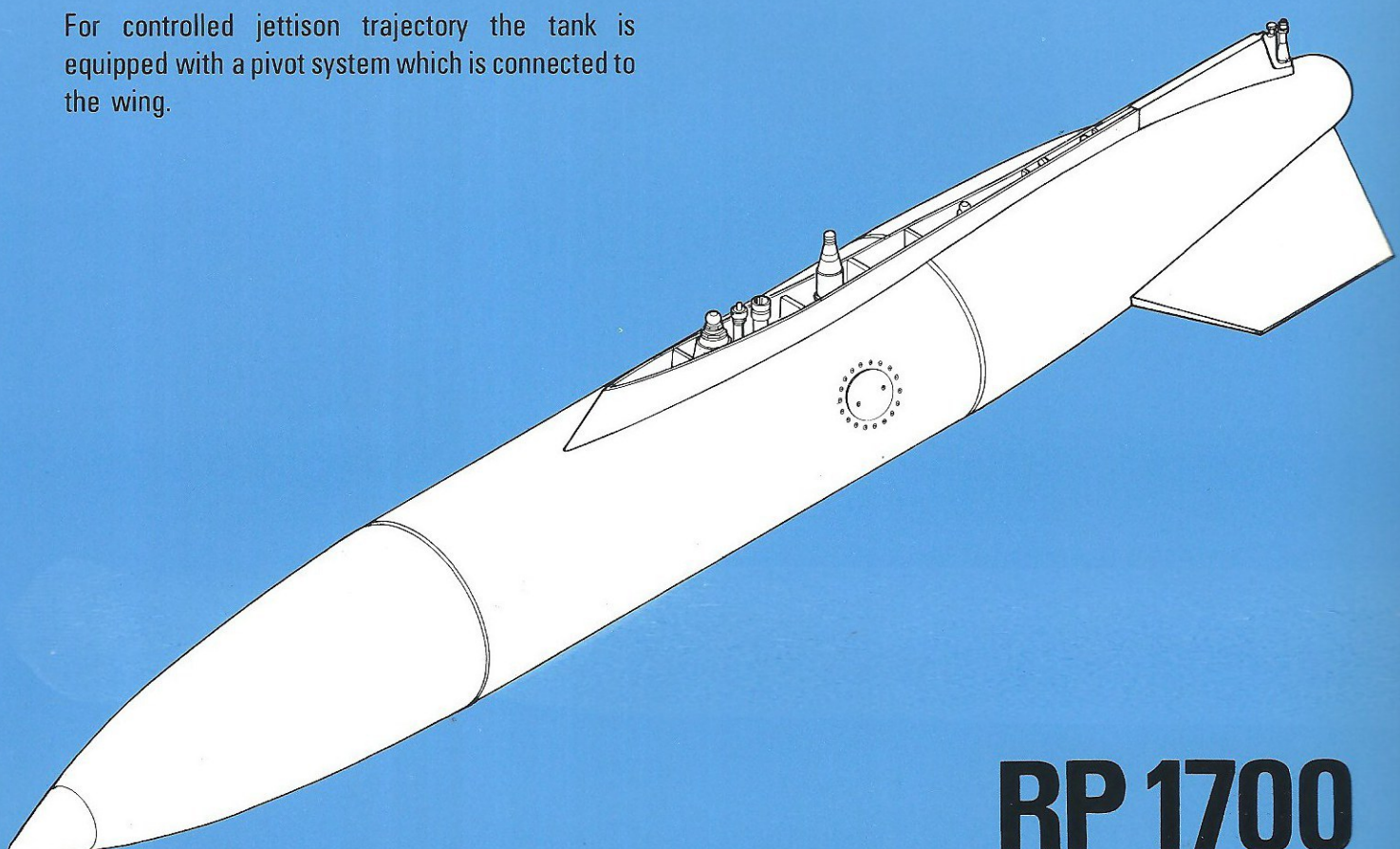
The tank includes an emergency quick fuel dump valve located in the aft part of the tank.

For controlled jettison trajectory the tank is equipped with a pivot system which is connected to the wing.

The jettisoning is actuated by 4 pyrotechnic cartridges of type I-28, I.M.I. Cat. No. 12-353.

Technical Data

	u.s.a.	metric
Capacity	435 gal	1650 lit
Empty Weight	462 lb	210 kg
Overall Length	250 inch	6360 mm
Max. Diameter	27 inch	690 mm
Operating Pressure	11.4 psi	0.8 atm



RP 1700

RP 300 N Fuel Tank
I.M.I. Cat. No. 07-728

The AERO 1D 300 gallon fuel tank is a jettisonable external suspension store.

The tank has standard MIL. SPEC.8591 lugs to permits its suspension from 14 inch and 30 inch standard store racks on A-4 and A-6 aircraft.

The tank is constructed of aluminum alloy nose, center and tail sections welded together.

The tank is equipped with a fuel fitting, an air pressure fitting, an electrical connector (quantity probe) and another electrical connector (float switch), which provide tank-to-pylon coupling.

The tank is also equipped with one gravity filler cap and two drain valves.

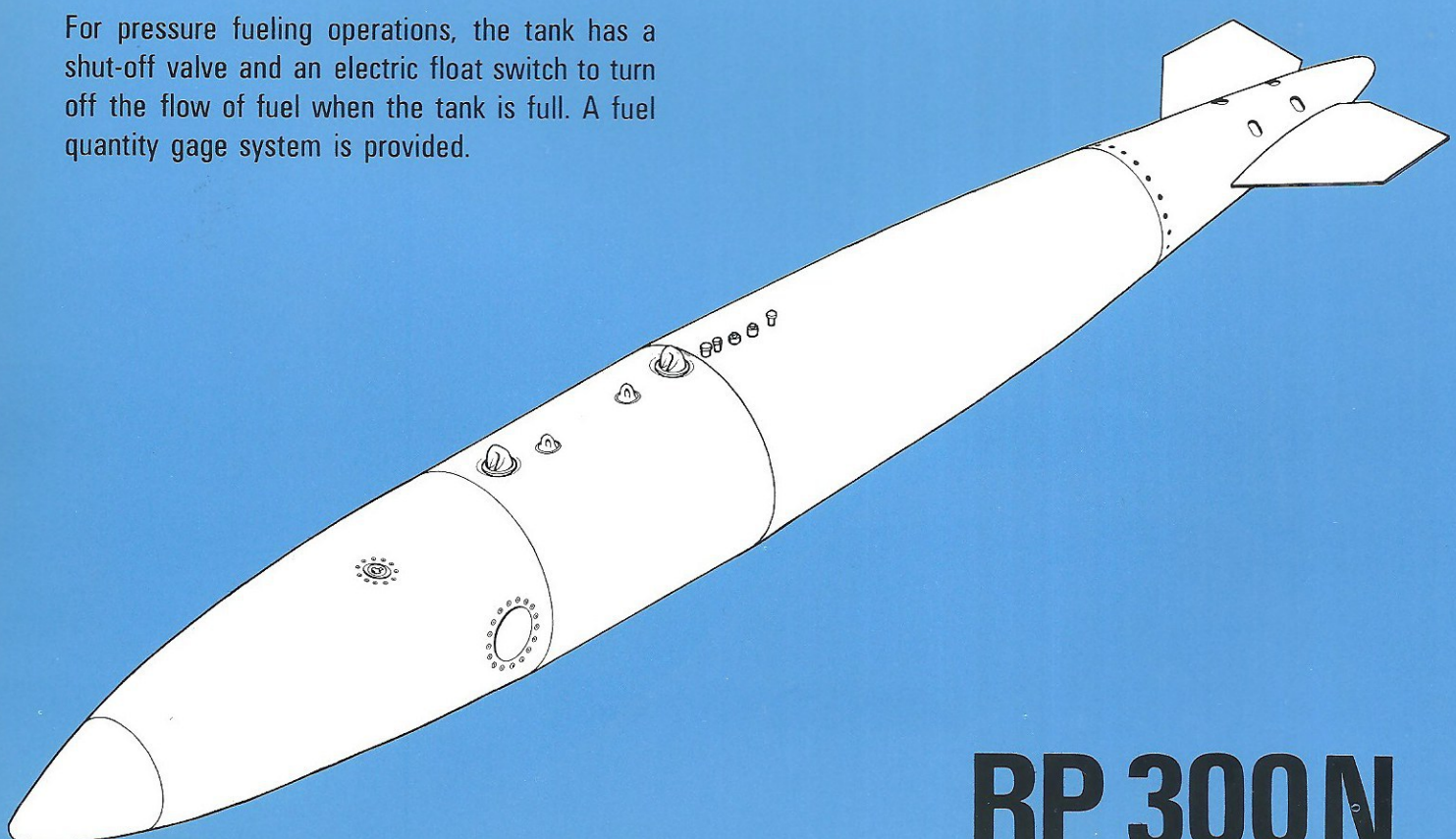
Compressed air required to transfer fuel into the aircraft fuel system is supplied from aircraft.

For pressure fueling operations, the tank has a shut-off valve and an electric float switch to turn off the flow of fuel when the tank is full. A fuel quantity gage system is provided.

The AERO ID 300 gallon tank is equipped with removable fins permitting the use of four, two or no fins.
These fins may be installed vertically, horizontally or at 45°.

Technical Data

	u.s.a.	metric
Capacity	300 gal	1136 lit
Empty Weight	200 lb	91 kg
Overall Length	227 inch	5766 mm
Max. Diameter	26.5 inch	673 mm
Operating Pressure	25.6 psi	1.8 atm



RP 300 N

RP 400 Fuel Tank
I.M.I. Cat. No. 07-706

The 400 gallon ATP-D1B is a jettisonable external suspension store. Lugs are provided for suspension from standard store racks incorporating 30 inch hook spacing, on the A-4 aircraft centerline station.

The tank is constructed of aluminum alloy nose, center and tail sections welded together.

The tank is equipped with a fuel fitting, an air pressure fitting, an electrical connector (quantity probe) and another electrical connector (float switch) which provide tank-to-pylon coupling.

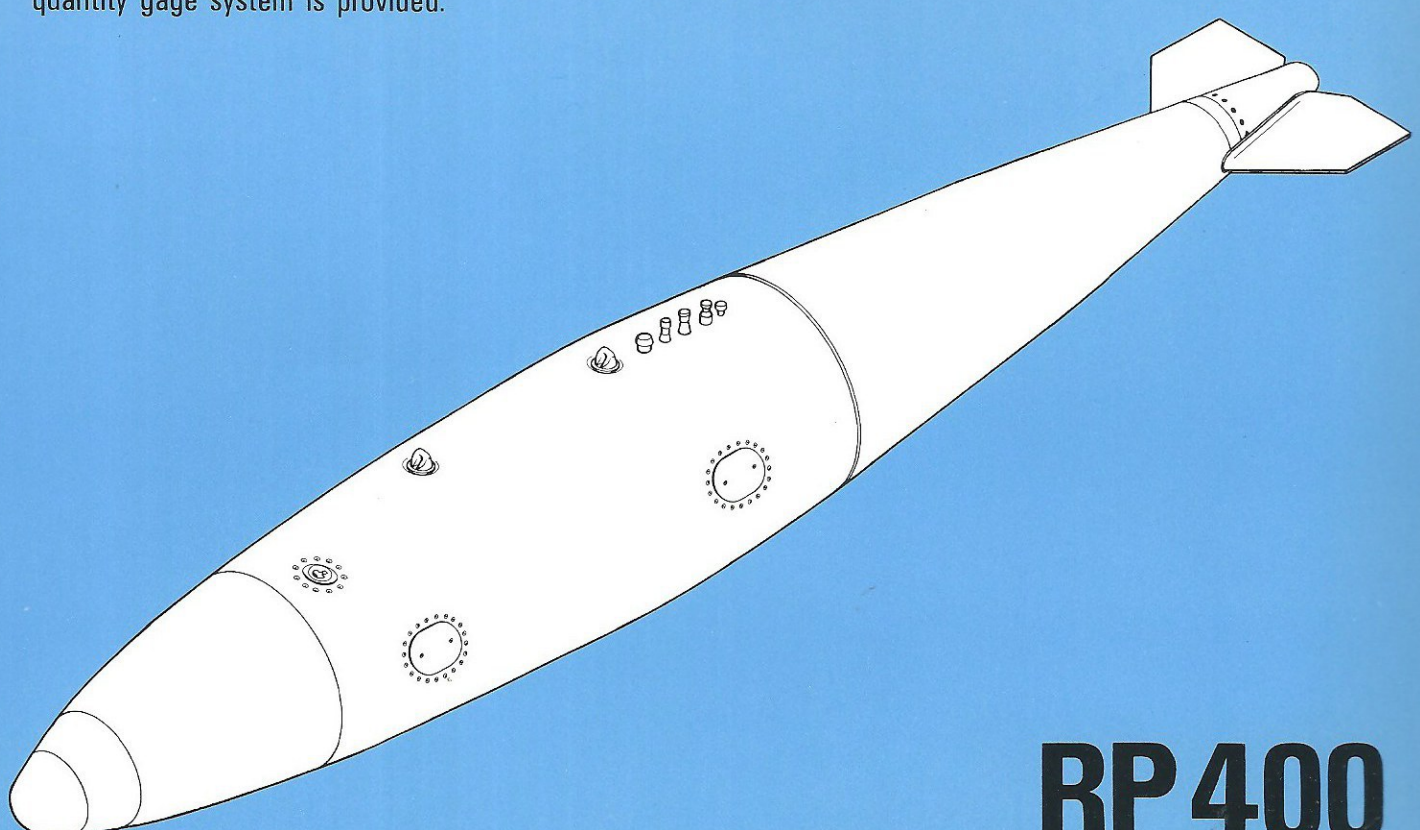
The tank is also equipped with one gravity filler cap and two drain valves. Compressed air required for fuel transfer into the aircraft fuel system is supplied from the aircraft.

For pressure fueling operations, the tank has a shut-off valve and an electric float switch to turn off the flow of fuel when the tank is full. A fuel quantity gage system is provided.

The 400 gallon ATP-D1B tank is equipped with externally bolted fins, permitting the use of four, two or no fins.
The fins may be also installed at 45°.

Technical Data

	u.s.a.	metric
Capacity	400 gal	1514 lit
Empty Weight	262 lb	119 kg
Overall Length	221 inch	5613 mm
Max. Diameter	32 inch	813 mm
Operating Pressure	15.6 psi	1.1 atm



RP 400

RP 370 Fuel Tank
I.M.I. Cat. No. 07-705

The 370 gallon jettisonable fuel tank equipped with an integral pylon is attached to the F-4 aircraft wing to provide longer flight endurance.

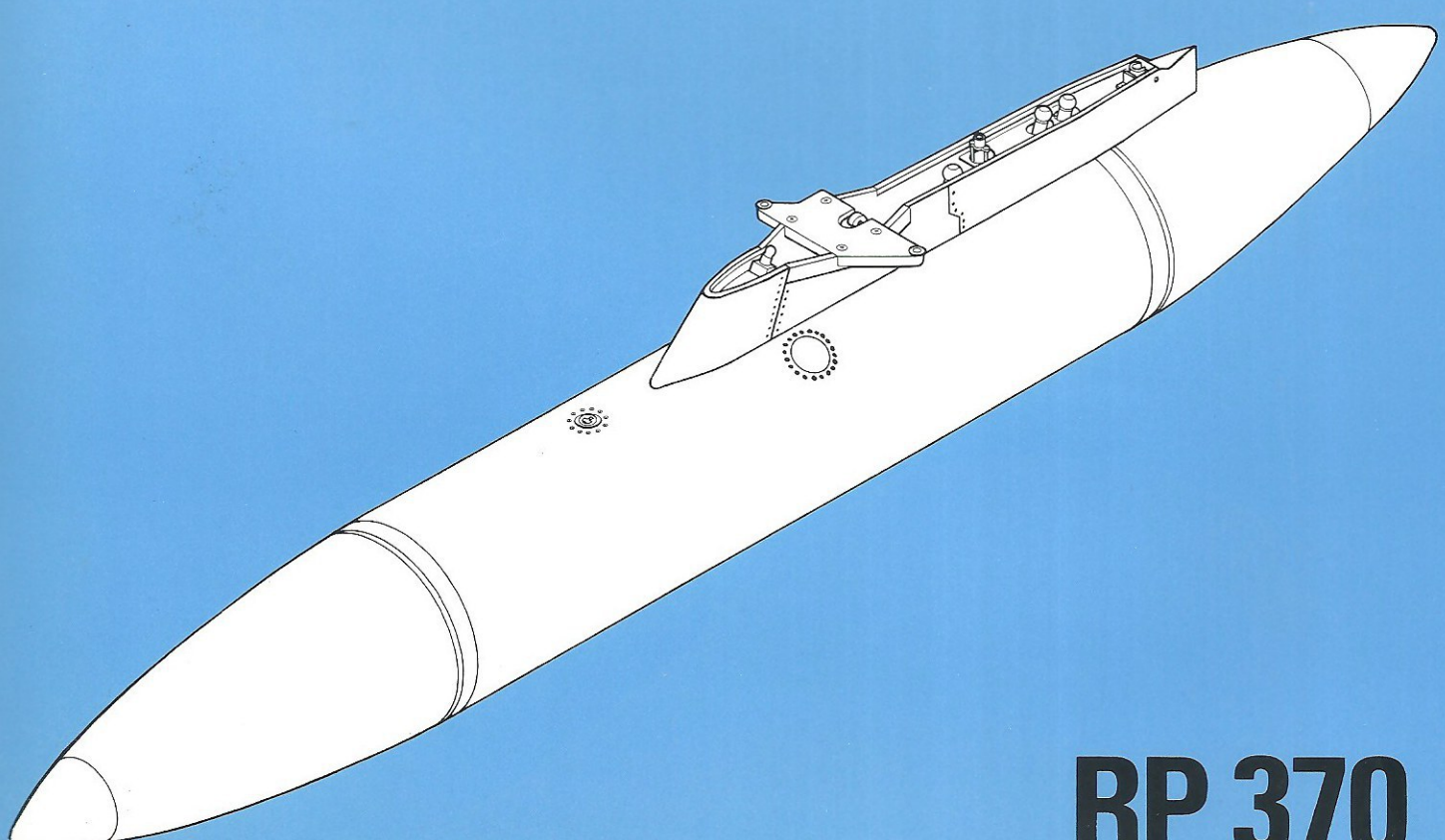
The fuel tank is comprised of assembled nose, center, and tail sections. All tank sections are internally bulkheaded and sealed to carry fuel, and utilize individual filler caps.

A hook, a fuel inlet fitting, an air pressure inlet fitting, an electrical connector and an aft pivot fitting provide the pylon-to-wing interface coupling. Three tank drain valves, one in each section, permit drainage of fuel tank sections when required.

The jettisoning function is performed by an ejection piston assembly located in the pylon and activated by two pyrotechnic cartridges.

Technical Data

	u.s.a.	metric
Capacity	370 gal	1400 lit
Empty Weight	288 lb	131 kg
Overall Length	240 inch	6096 mm
Max. Diameter	25.5 inch	648 mm
Operating Pressure	20 psi	1.4 atm



RP 370

RP 600 Fuel Tank
I.M.I. Cat. No. 07-708

The 600 gallon jettisonable centerline fuel tank is attached to the F-4 aircraft to provide longer flight endurance.

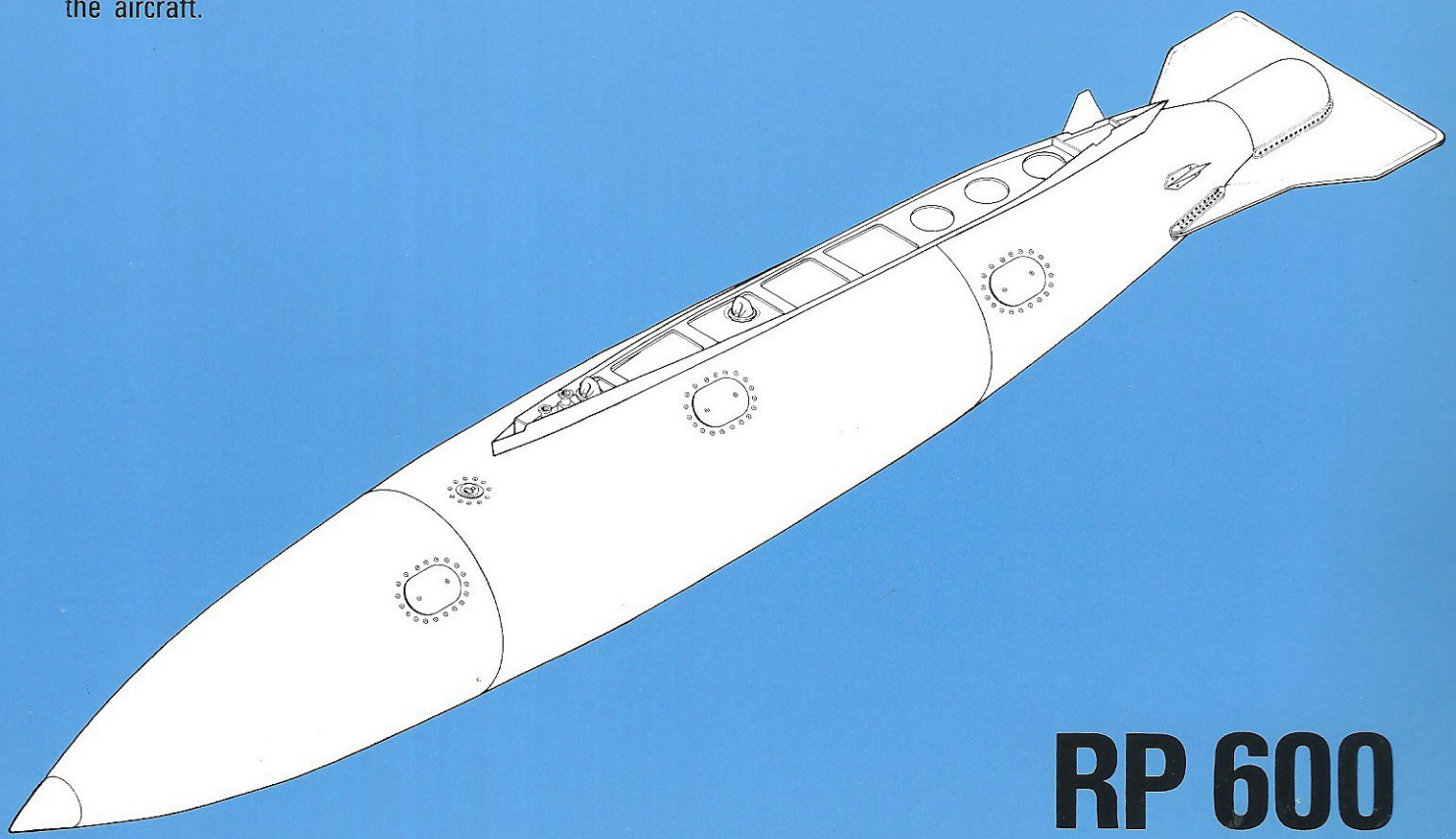
The tank is constructed of aluminum alloy sections welded together to form a single compartment.

The tank may be equipped with a finned tail section to expand the jettison envelope (IMI Cat. No. 07-709).

Two suspension lugs, a fuel fitting, an air pressure fitting, an electrical connector (float switch) and two aft supports provide the tank–to–aircraft coupling.
The lugs and fittings are enclosed by an aerodynamic fairing.
The tank is equipped with one gravity filler cap and one drain valve.
Compressed air, required to transfer fuel from the tank into the aircraft fuel system is supplied from the aircraft.

Technical Data

	u.s.a.	metric
Capacity	600 gal	2271 lit
Empty Weight	290 lb	132 kg
Overall Length (without finned tail section)	260 inch	6604 mm
Max. Diameter	34.4 inch	874 mm
Operating Pressure	20 psi	1.4 atm



RP 600

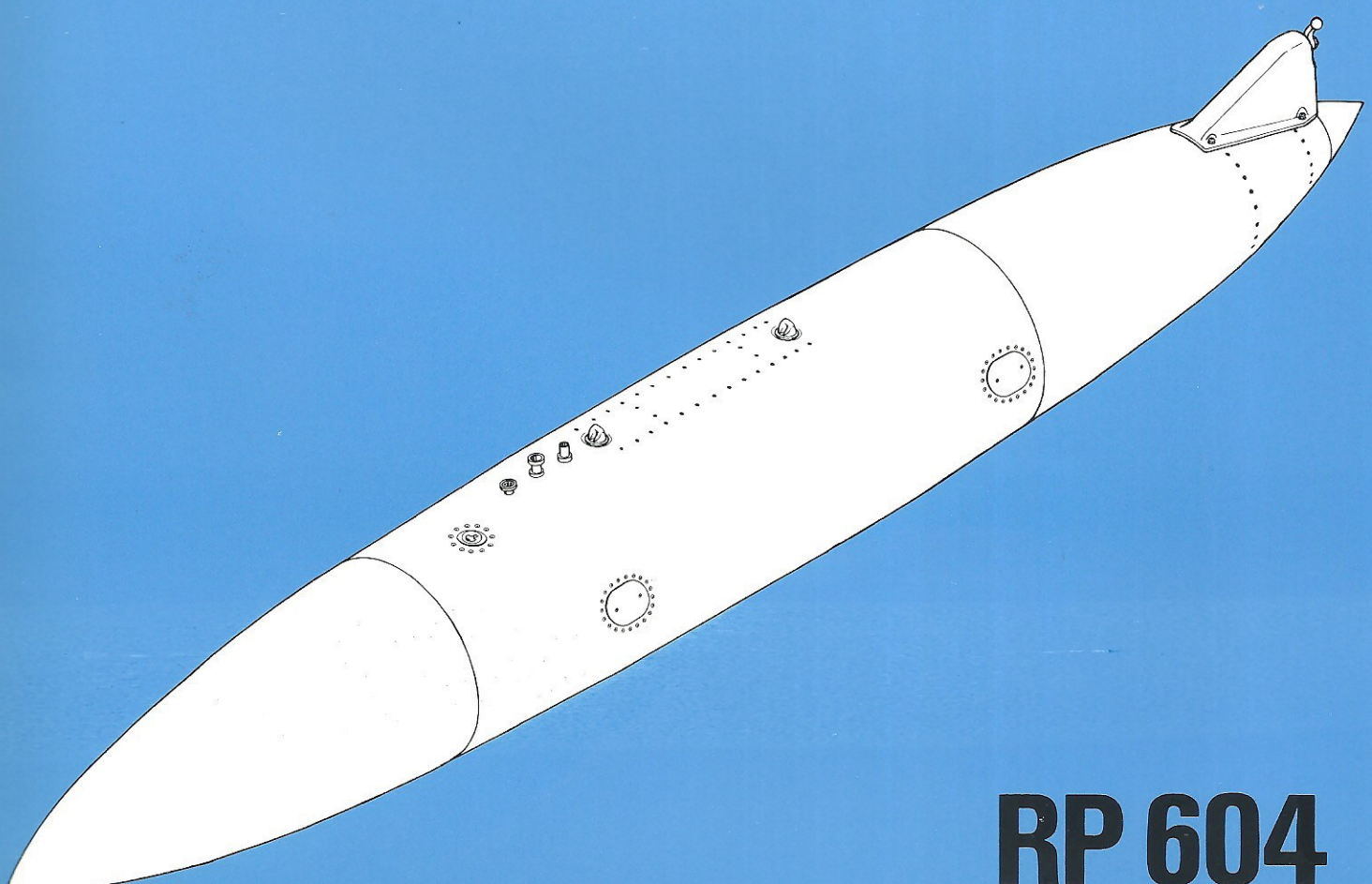
RP 604 Fuel Tank
I.M.I. Cat. No. 07-741

The high performance 600 gallon jettisonable fuel tank is externally mounted on the F-4 centerline station. The tank is constructed of aluminum alloy sections welded together over structural rings which reduce sloshing, to form a single compartment. Each tank is equipped with a gravity filler cap, two suspension lugs, drain valve, electrical, fuel and air quick disconnects. Fuel transfer occurs automatically when air pressure from aircraft is applied through the air quick disconnect.

The tank is equipped with an aft pivot system in order to expand the jettison envelope, through controlled jettison trajectory. Use of this tank on the F-4 aircraft requires a retrofit installation of an aft pivot fitting kit on the fuselage structure.

Technical Data

	u.s.a.	metric
Capacity	600 gal	2271 lit
Empty Weight	319 lb	145 kg
Overall Length	260 inch	6604 mm
Max. Diameter	32.6 inch	828 mm
Operating Pressure	20 psi	1.4 atm



RP 604

RP 302 Fuel Tank
I.M.I. Cat. No. 07-748

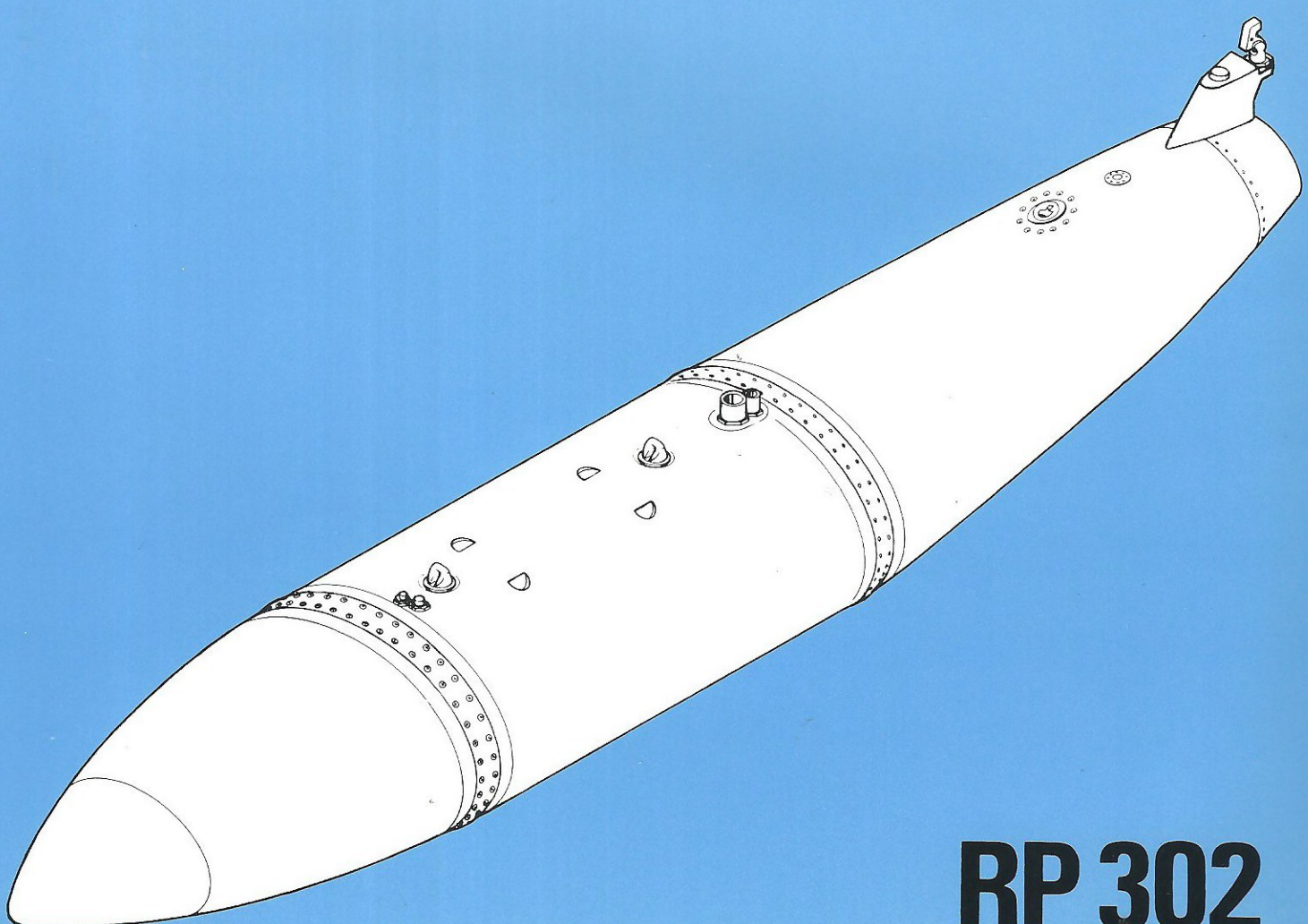
The 300 gallon external centerline elliptical fuel tank is comprised of assembled nose, center, and tail section shells.

It is used as an external pylon-mounted fuel tank on the F-16 aircraft centerline station. The auxiliary fuel is transferred to the aircraft main fuel system by controlled application of air pressure.

The tank is equipped with two suspension lugs, air pressure fitting, fuel fitting, electrical connectors (solenoid & flow switch and quantity probe) which provide the tank-to-centerline pylon coupling. The tank is also equipped with an aft pivot system connected to the aircraft providing controlled jettison trajectory.

Technical Data

	u.s.a.	metric
Capacity	300 gal	1139 lit
Empty Weight	363 lb	165 kg
Overall Length	179 inch	4554 mm
Max. Cross Section		
Major Axis	34 inch	864 mm
Minor Axis	23 inch	591 mm
Operating Pressure	24.2 psi	1.7 atm



RP 302

RP 372 Fuel Tank
I.M.I. Cat. No. 07-738

The 370 gallon external fuel tank equipped with an integral pylon is attached to the F-16 aircraft wings to provide longer flight endurance.

The fuel tank is comprised of nose, center, and finned tail sections welded together. All tank sections are internally bulkheaded and sealed to carry fuel, and utilize individual filler caps. An ejector system attachment bolt, a fuel fitting, an air pressure fitting, an electrical (quantity gage system) connector, an electrical connector (solenoid and flow switch) and an aft pivot bolt provide the pylon-to-wing interface coupling. Three tank drain valves, one in each section, permit drainage of fuel tank sections when required. The auxiliary fuel from the external tank is transferred to the aircraft main fuel system by controlled application of air pressure.

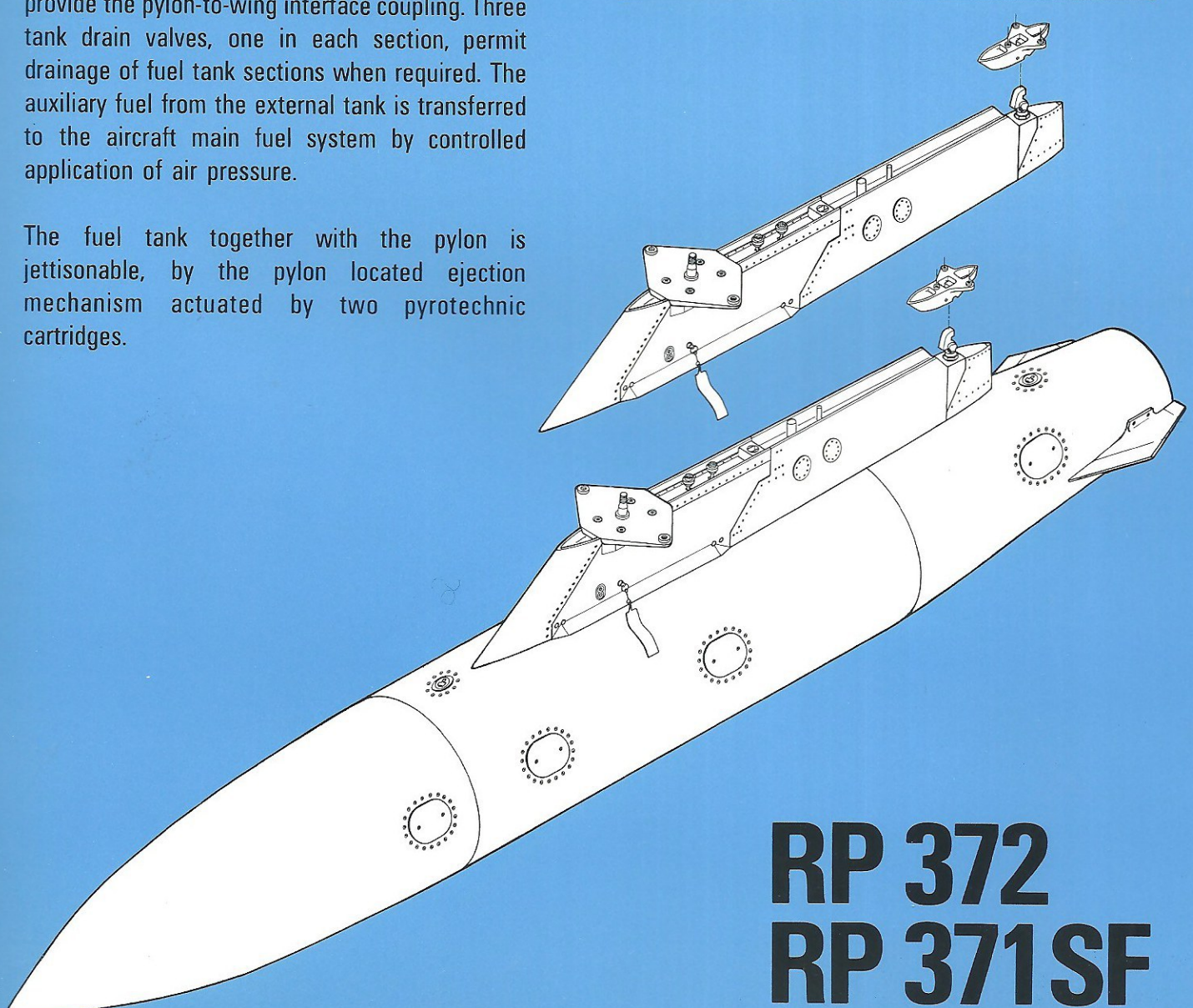
The fuel tank together with the pylon is jettisonable, by the pylon located ejection mechanism actuated by two pyrotechnic cartridges.

RP 371 SF Fuel Tank Pylon
I.M.I. Cat. No. 07-447

Center of gravity control is maintained by the following fuel transfer sequence: center, aft and front section.

Technical Data

	u.s.a.	metric
Capacity	370 gal	1400 lit
Empty Weight	420 lb	191 kg
Overall Length	219 inch	5563 mm
Max. Diameter	26.5 inch	673 mm
Operating Pressure	24 psi	1.7 atm



RP 372
RP 371SF

RP 616 Fuel Tank
I.M.I. Cat. No. 07-739

The 580 gallon jettisonable fuel tank is attached to the F-16 aircraft wing pylon to provide longer flight endurance. The tank is constructed of aluminum alloy nose, center, and finned tail sections welded together. All tank sections are internally bulkheaded and sealed to carry fuel, and utilize individual filler caps.

Two suspension lugs, a fuel fitting, an air pressure fitting, an electrical (quantity gage system) connector, an electrical (solenoid and float switch) connector and an aft pivot bolt provide the tank-to-pylon interface coupling. Three drain valves, one in each section, permit drainage of fuel tank sections when required.

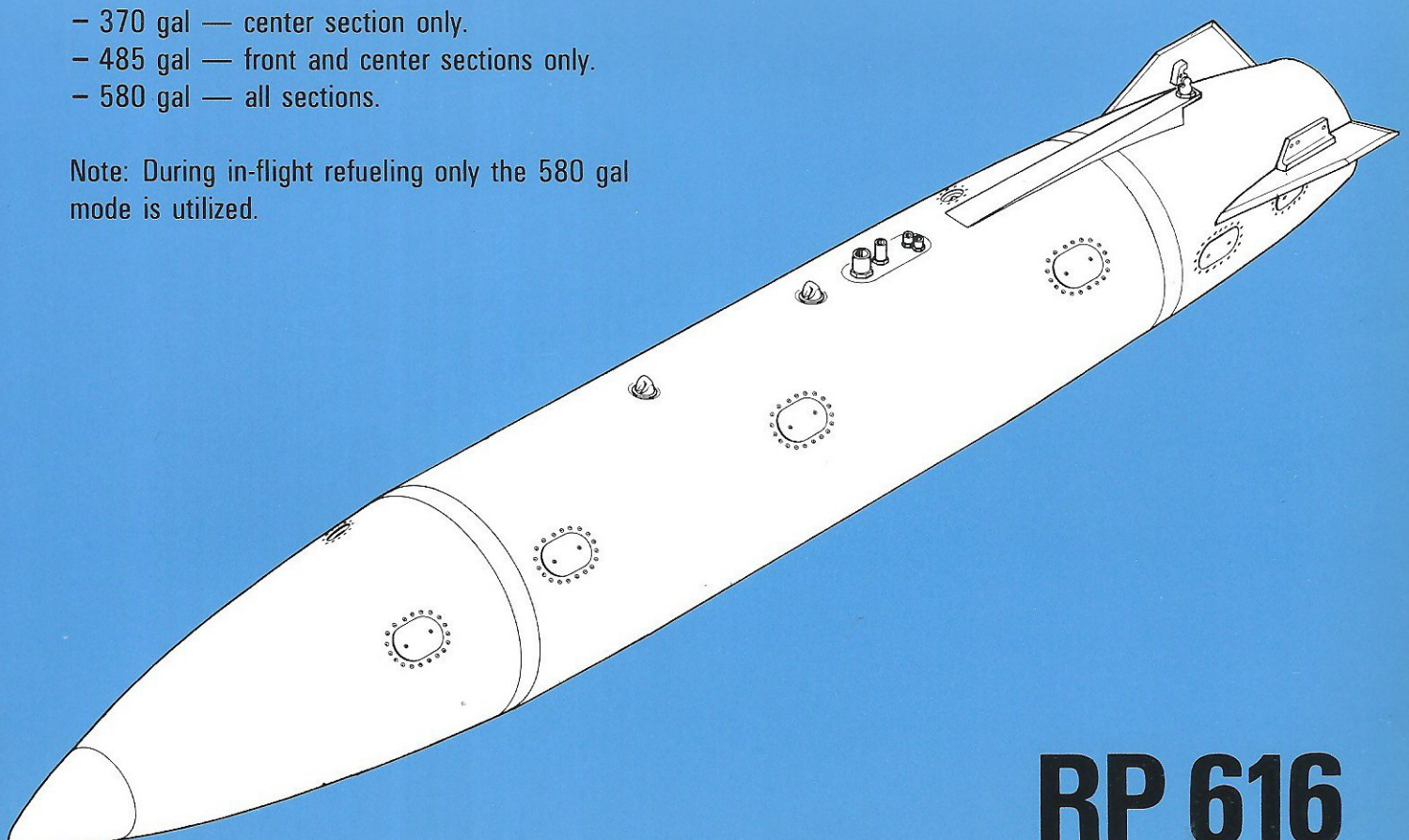
In the ground pressure refueling mode (through the aircraft fuel system) this tank features a selector valve, enabling partial filling as follows:

- 370 gal — center section only.
- 485 gal — front and center sections only.
- 580 gal — all sections.

Note: During in-flight refueling only the 580 gal mode is utilized.

Technical Data

	u.s.a.	metric
Capacity:		
"Full" Mode	580 gal	2197 lit
"485" Mode	485 gal	1837 lit
"370" Mode	370 gal	1401 lit
Empty Weight	380 lb	173 kg
Overall Length	236.5 inch	6007 mm
Max. Diameter	32.6 inch	828 mm
Operating Pressure	24 psi	1.7 atm



RP 616

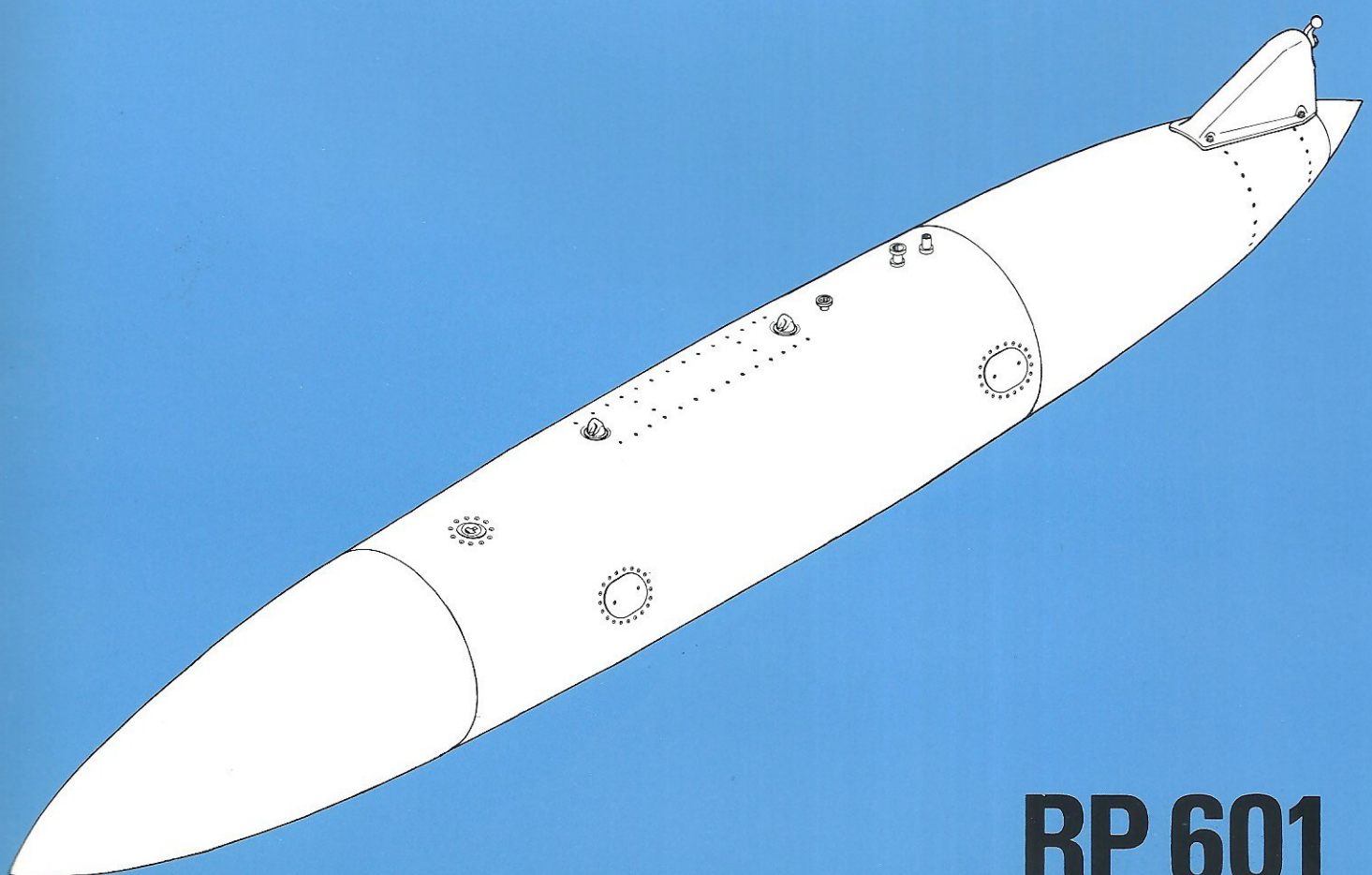
RP 601 Fuel Tank
I.M.I. Cat. No. 07-707

The 600 gallon jettisonable fuel tank is externally mounted on F-15 aircraft. The tank is constructed of aluminum alloy sections welded together over structural rings which reduce sloshing, to form a single compartment.

Two suspension lugs, a fuel fitting, an air pressure fitting, an electrical connector (solenoids and quantity probe), provide the tank-to-pylon coupling.
The tank is equipped with one gravity filler cap and one drain valve.
The tank is equipped with an aft pivot system providing controlled jettison trajectory.
Compressed air, required to transfer fuel from the tank into the aircraft fuel system is supplied from the aircraft.

Technical Data

	u.s.a.	metric
Capacity	600 gal	2271 lit
Empty Weight	319 lb	145 kg
Overall Length	260 inch	6604 mm
Max. Diameter	32.6 inch	828 mm
Operating Pressure	25.6 psi	1.8 atm



RP 601

RP-267 Fuel Tank

I.M.I. Cat. No. 07-689

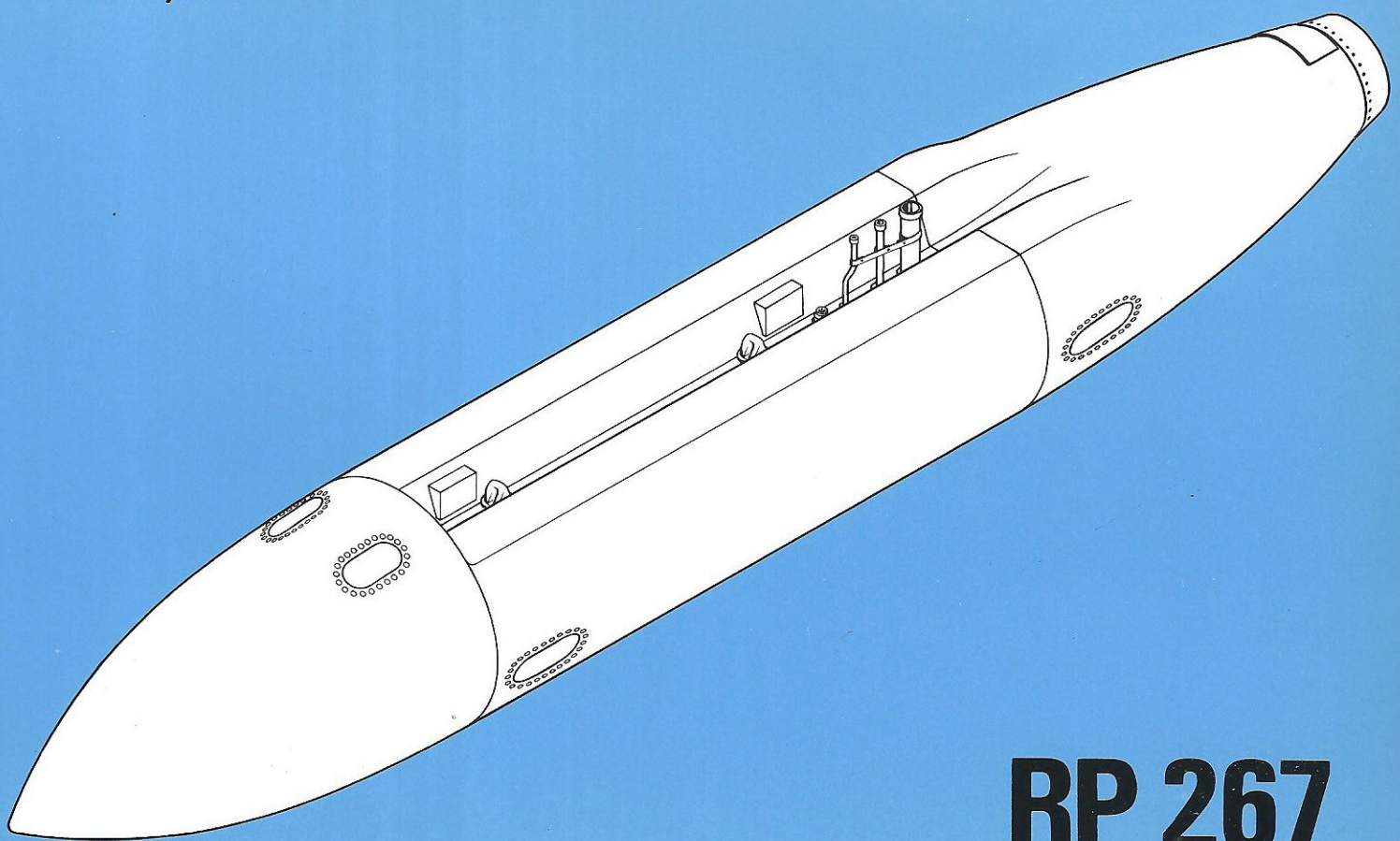
The 267 gallon jettisonable fuel tank is externally mounted on both sides of the F-14 aircraft fuselage. The tank is constructed of aluminum alloy FWD, center and AFT sections welded together. The sections are internally reinforced by frames.

Interface with the aircraft's pylon is provided by suspension lugs (30" apart), reinforced bearing plates, fuel and air fittings and an electrical connector.

The fuel system is capable of ground/aerial pressure refueling, transferring fuel by applying air pressure from the aircraft systems, controlling internal pressure and drainage of the water sump. Fuel level is measured by electrical gages or can be detected by a sight-gage. The refueling/defueling operation can be prechecked from the aircraft system.

Technical Data

	u.s.a.	metric
Capacity	267 gal	1011 lit
Empty Weight	230 lb	104.3 kg
Overall Length	177.2 inch	4501 mm
Max. Diameter	26.5 inch	673.1 mm
Operating Pressure	25 psi	1.8 atm



RP 267

RP-330 Fuel Tank

I.M.I. Cat. No. 07-695

The 330 gallon jettisonable fuel tank is externally mounted on the F/A-18 aircraft wings or centerline station. The tank is constructed of composite material layers applied over an internal liner made of welded aluminum alloy skin. This structure provides excellent surviveability under conditions of fuel fire, gun fire and crash impact.

The 330 gallon tank is also available without the composite material layer configuration. This tank type has a skin made in the same contour but of a higher sheet thickness (2.3mm in cones and 2.03mm in center section instead of 1.6mm). All the tank's operational characteristics remain the same as the composite-wound tank.

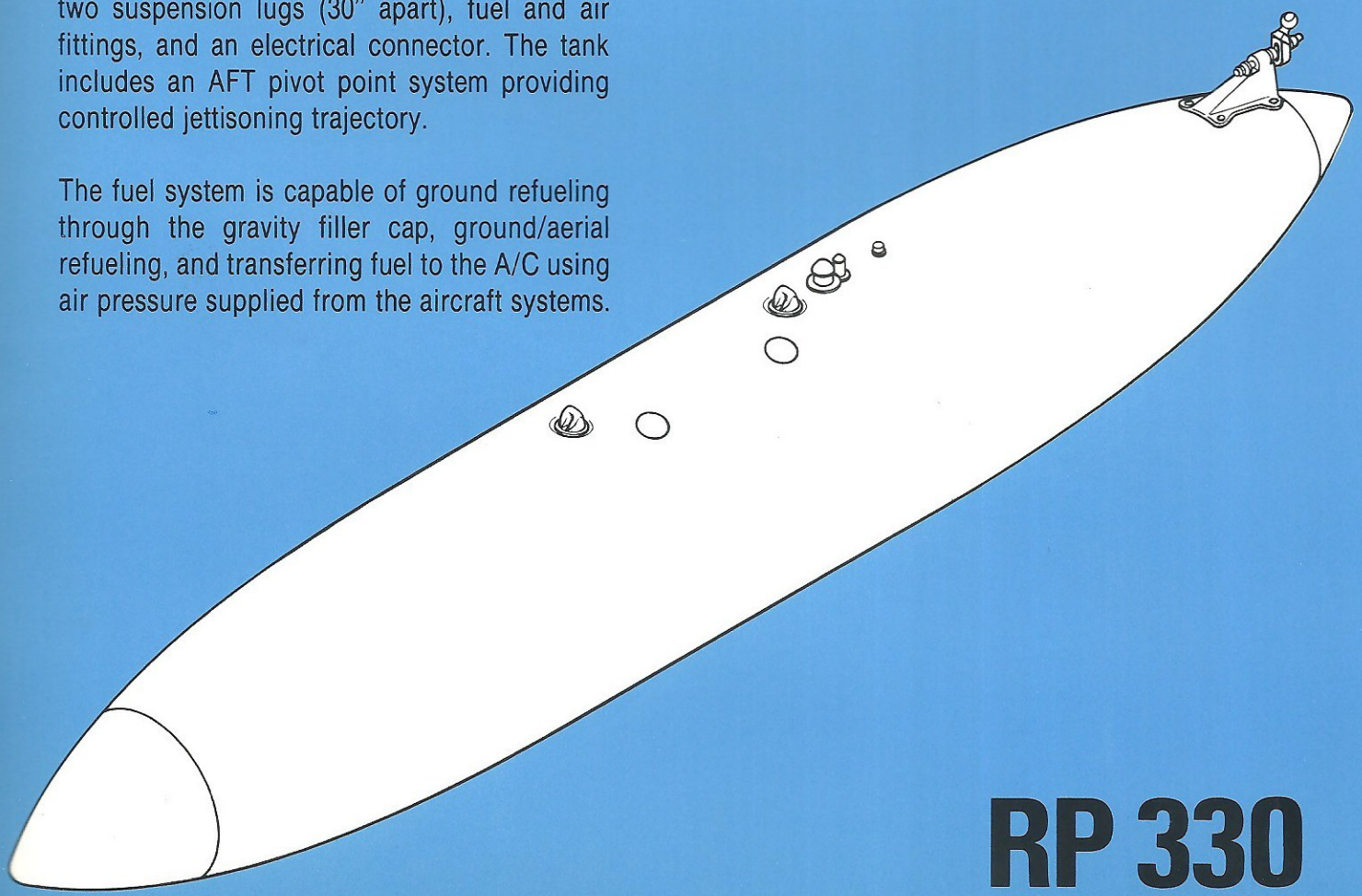
Interface with the aircraft's pylon is provided by two suspension lugs (30" apart), fuel and air fittings, and an electrical connector. The tank includes an AFT pivot point system providing controlled jettisoning trajectory.

The fuel system is capable of ground refueling through the gravity filler cap, ground/aerial refueling, and transferring fuel to the A/C using air pressure supplied from the aircraft systems.

The refueling/defueling operation can be prechecked either manually or electrically from the aircraft. The fuel system includes also means for controlling internal pressure, a drain valve for drainage of the water sump, and an electrical fuel gage.

Technical Data

	u.s.a.	metric
Capacity	330 gal	1250 lit
Empty Weight	294 lb	133.3 kg
Overall Length	183 inch	4648 mm
Max. Diameter	28.8 inch	731.5 mm
Operating Pressure	15 psi	1.1 atm



RP 330

RP-300 AV-8B Fuel Tank

I.M.I. Cat. No. 07-691

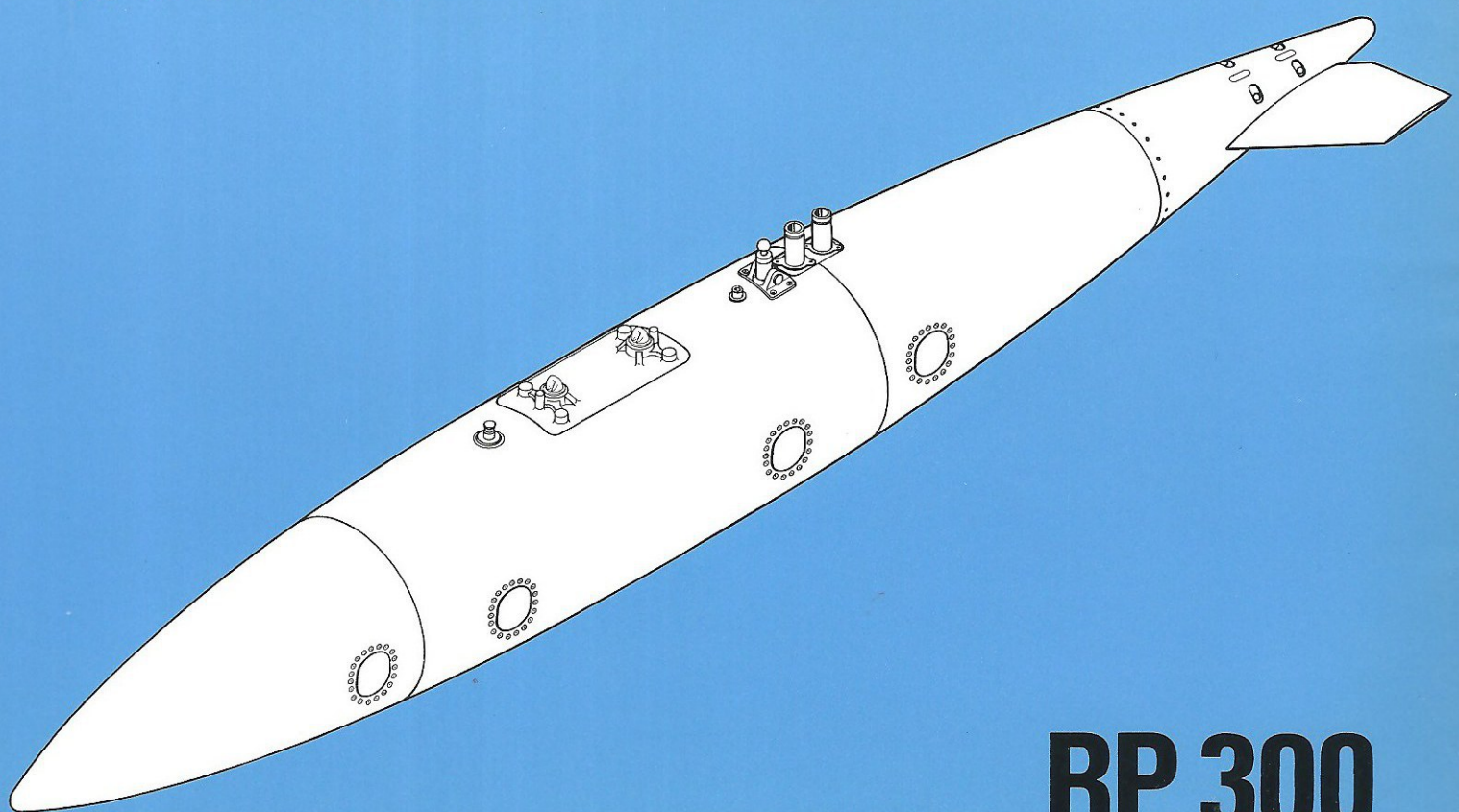
The 300 gallon jettisonable external fuel tank is mounted under each of the AV-8B aircraft wings. The tank can be interchanged between wings by reinstalling the tail fin in the required side of the cone. The tank is constructed of aluminum alloy FWD, center and AFT sections welded together. The tail cone with a single fin is assembled by bolts to the AFT section. The tank has two internal bulkheads which form three fuel cells interconnected by pipes.

Interface with the aircraft's pylon is provided by two suspension lugs (14" apart), fuel and air fittings, and electrical connector, a swivel bearing and a support-foot.

The fuel system is capable of pressure refueling and transferring fuel to the aircraft in a controlled sequence of the fuel-cells. The tank has three drain valves, each in every cell, three fuel level gages and a fuel level sensor.

Technical Data

	u.s.a.	metric
Capacity	300 gal	1136 lit
Empty Weight	210 lb	95.2 kg
Overall Length	227 inch	5766 mm
Max. Diameter	26.5 inch	672.6 mm
Operating Pressure	10 psi	0.7 atm



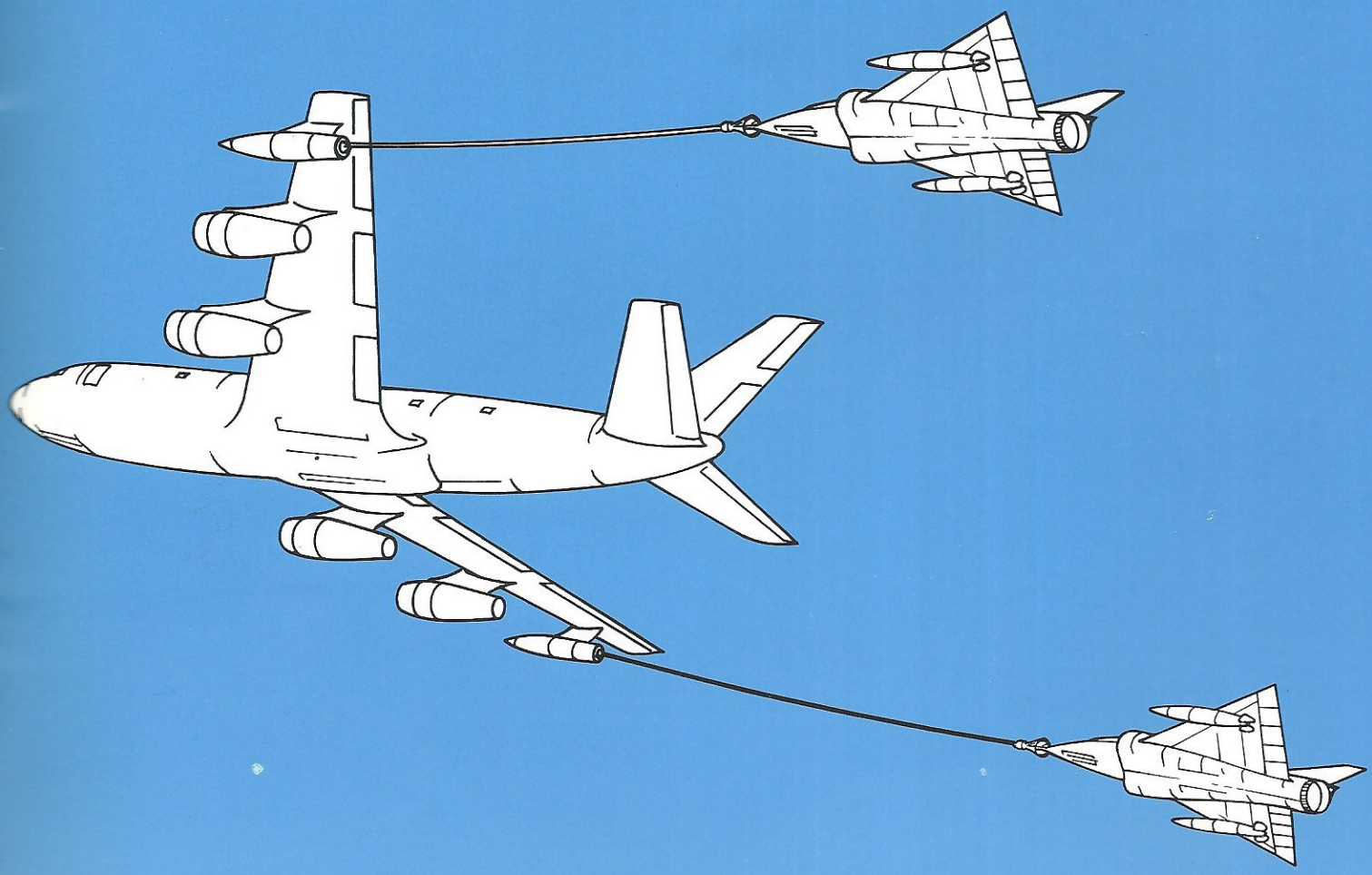
RP 300

Up-Grading Fuel Tanks

The following tanks can be up-graded to include aerial pressure refueling capability in addition to their original characteristics:

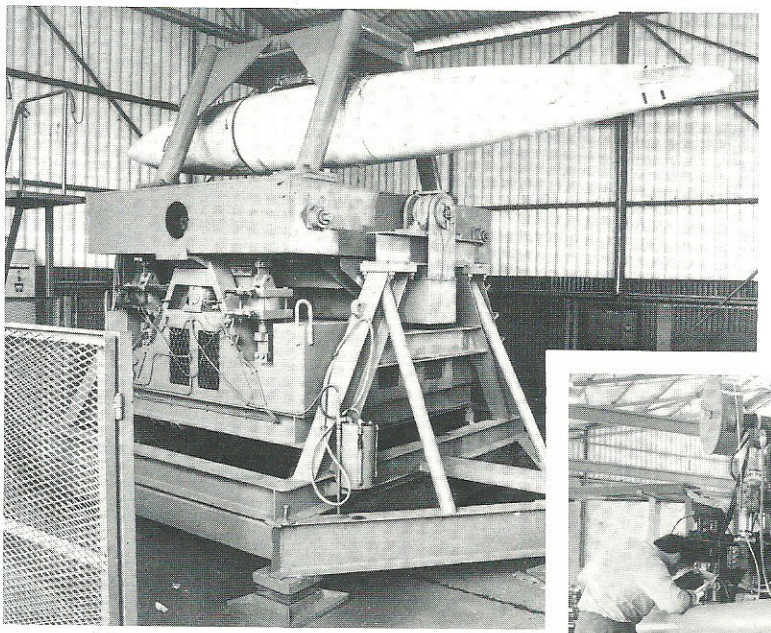
RP-18	RP-825	RP-1301
RP-500A	RP-1300F	RP-1302
RP-500B	RP-1300P	RP-1700

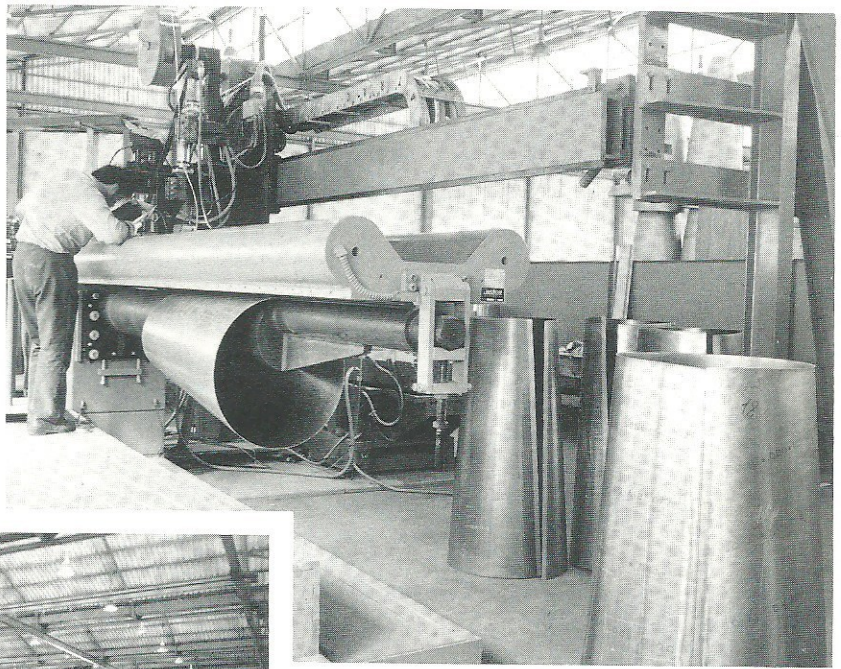
The modification consists, generally, of adding a non-return refuel valve, a vent valve (or equivalent), and a float switch as a fuel high level sensor. The up-grading requires only minor modifications (if any) of the tank structure, and an electrical connection to the pylon or wing.



EXTERNAL FUEL TANKS AND PYLONS

FOR AIRCRAFT





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